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DENTAL MATERIA MEDICA

W. H. Doherty
Royal College of Dental Surgeons
Dorset
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NOTES ON

DENTAL MATERIA MEDICA.

DEFINITIONS

MATERIA MEDICA is that part of medical science that describes the substances employed in the prevention and treatment of disease. Names, sources, preparation, physical and chemical properties, (physiological action, Therapeutic value, dose, etc., etc.

THERAPEUTICS is that part of med. science that describes the application of remedies and the curative treatment of disease. Therapeutic value.

PHYSIOLOGICAL ACTION of a drug is its power, when given in certain doses, to modify normal conditions and processes in the body.

TERMS USED IN THE PREPARATION OF DRUGS.

DECANTATION, - allowing the insoluble particles in a liquid to settle and pouring off the liquid. Sediment, "held in suspension."

FILTRATION, - separation of liquid from insoluble particles by allowing fluid to pass through a porous membrane. Filtrate, residue.

CLARIFICATION, - Separation of liquid from solid particles by means of some coagulable agent. e.g. Egg and coffee.

DISTILLATION - conversion of a liquid into gas, and recondensation of the gas into liquid by means of an alembic, or retort and receiver. Distillate, Fractional distillation. Destructive distillation.

PRECIPITATION, - separation of a fluid from a solid in solution by means of some chemical or physical agent that causes the dissolved solid to fall as a powder to the bottom of the fluid. Precipitate.

SUBLIMATION, - Solids which, when heated, pass directly into a vapor are said to sublime. The vapor when condensed is called a sublimate. Florwes.

SOLUTION, - The diffusion of a solid through a liquid, known as the solvent, in such a way that the solid becomes liquid along with the solvent. (Another definition) A Solution is where the attraction of cohesion in one substance is overcome by the attraction of adhesion of another and the two become one homogeneous substance. Sol. of fluid in a fluid, - of gas in a fluid, - Saturated sol. - Solubility of a substance is the proportion by weight that will saturate a fluid.

EMULSION, - a preparation in which substances insoluble in water, as oils, resins, etc., are suspended in water in a fine state of division, by means of mucilage, sugar, etc.

MACERATION, - the steeping of a substance in hot or cold water to extract its soluble virtues.

OFFICIAL PREPARATIONS.

INFUSION, - an aqueous solution of the active principle of a vegetable drug obtained by maceration.

INFUSIONS,- a class of preparations,-generally prepared near the boiling point,- some in cold water,- e.g. Infusum quassiae, calumbiae, rhei, sennae,- Dose generally f3i-ii.

DECOCTION,- aqueous solution of the active principle of a veg. drug obtained by boiling. Inadmissible when the active principle is volatile, or contains starch,- a class of preparations. Dose usually f3i-ii.

TINCTURE,- alcoholic solution of the non-volatile principle of a drug. "ammoniated tincture" "etherial tincture" e.g. Tinc. of aconite, arnica, capsicum.

ESSENCE,- alcoholic solution of a volatile oil. (1 in 5).

SPIRIT,- "but weak, (1 in 50)

LIQUOR,- (solution) an aqueous solution of a non-volatile.

AQUA,- "volatile oil.

(a liquor is an aqueous solution of some chemical compound, while infusa and decocta are of vegetable drugs) (volatile oils are sparingly soluble in water.)

EXTRACT,- evaporated juice of a plant, or the soluble constituents of a dried vegetable drug. For pills, capsules etc. Aqueous and alcoholic.- Dried Extract, pilular consistency.- Fluid Extract, gr.i of crude drug equals or is represented by mj of its F. Ext.

ALKALOID,- a substance formed from the tissues of a plant having a definite chemical composition, capable of combining with acids to form salts, and possessing the active medicinal principle of the vegetable drug.

SYRUP,- a medicinal fluid containing a large proportion of sugar.

CATAPLASM,- A soft moist substance to be applied to some part of the body surface,-a poultice,-should be non-irritating,- manner of action open to question,- water absorbed is sedative.

ENEMA,- Liquid medicinal preparation for injection by the rectum. (3 purposes).

SUPPOSITORY,- medicinal preparation in the form of conical body whose basis is usually cacao butter, for introduction into the rectum.

LINIMENT,- a preparation of such consistence that it may be applied to the skin with gentle friction.

GLYCERITE,- a preparation in which glycerine is the solvent.

VOLATILE, ESSENTIAL, or DISTILLED OILS,- oils obtained from odoriferous vegetable substances by distillation,-pungent,- contains the active principle,-resemble Turpentine, $C_{10}H_{16}$.

FIXED or FATTY OILS,- composed of fatty acids, (Oleic, stearic and palmitic) and a base, usually Glyceryl, C_3H_5 .

UNGUENTUM,- a fatty solid substance for external application. an ointment. CERATUM,- contains wax and is firmer.

DELIQUESCENT,- a solid that liquifies in the atmosphere by absorbing its moisture. incl. *hygroscopic*

EFFLORESCENT,- a solid crystal that becomes a powder by giving up to the atmosphere its water of crystallization.

a fluid which is so evaporated as to be
all the medicinal virtue of the crude drug.

INFUSION - a class of preparations, generally prepared
near the boiling point - some in cold water, e.g. in
liquid substances, medicinal, chief, essence, - Dose gener-
ally 1-2 fl. oz.

DECOCTION - aqueous solution of the active principle of a
very hard substance by boiling. Indispensable when the
active principle is volatile, or contains starch, - a
class of preparations. Dose usually 1-2 fl. oz.

TINCTURE - alcoholic solution of the non-volatile principle
of a drug - "essenced tincture" "etheral tincture"
e.g. tinct. of aconite, aconite, capsicum.

EXTRACT - alcoholic solution of a volatile oil (1 in 5)
the weight (1000)
Liquor - (tincture) an aqueous solution of a non-volatile
volatile oil.

EXTRACT - a term used in the solution of some chemical com-
pounds, which are soluble in water and alcohol (e.g. of vegetable drugs)
volatile oils are sparingly soluble in water.

EXTRACT - evaporated juice of a plant or the residue remain-
ing after a liquid vegetable drug, for pills, capsules, etc.
Alcohol and ethereal - liquid extract, pillular concentra-
tion - 1 fl. oz. extract, 100 fl. oz. of crude drug equals 100 fl. oz.

ANALOGUE - a substance formed from the tissues of a plant
having a definite chemical composition, capable of com-
bining with acids to form salts, and possessing the active
medicinal principle of the vegetable drug.

SYMP - a medicinal fluid containing a large proportion of
water.

GAL - a soft moist substance to be applied to some
part of the body surface, - a solution, - should be non-toxic -
often - manner of action open to question - water absorbed
as a solvent.

EMULSION - liquid medicinal preparation for injection by the
vein (10 suggested).

HYPODERMIC - medicinal preparation in the form of conical
body which is usually given by injection for introduction
into the system.

EMULSION - a preparation of such concentration that it may be
applied to the skin with gentle friction.

GLYCERIN - a preparation in which glycerine is the solvent.
WATER - a preparation of medicinal oils, - oils obtained from
medicinal vegetable substances by distillation - emulsion.

EMULSION - a preparation of fatty acids, (oleic, stearic
and palmitic) and a base, usually glycerol, Dose -
1 fl. oz. - a fatty acid substance for external application.

EMULSION - a solid that liquefies in the atmosphere by
exposure to the moisture.

EMULSION - a solid extract that becomes a powder by dry-
ing up in the atmosphere the water of crystallization.

CLASSIFICATION OF REMEDIES.

- NEUROTICS**, - (or Nervines), - m.a. which have a specific action upon, and modify the functions of the nervous system.
- ECORITICS**, - m. a. which have a specific action upon the excretory and secretory organs.
- HAEMETICS**, - m. a. which have a specific action upon the condition and constitution of the blood.
- CARDIACS**, - m. a. which have a specific action upon the mechanism of circulation.
- TOPICAL**, - m. a. which have a specific action upon the part to which applied.

NEUROTICS:

- MARCOTICS**, - m. a. which impair cerebral and spinal functions first stimulating, then depressing, and induce a condition of stupor or sleep. e. g. Person under influence of opium; impression on peripheral nerves slowly and imperfectly conducted, - imperfectly perceived, brain practically asleep.
- (a) Narcotics when used to induce sleep are called **Narcotics**, **Soporifics**, or **Somnifacients**. - e.g. Chloral Hydrate, Alcohol (large), Bromides as KBr, NaBr, Li_2Br (used when others are too depressing).
- (b) Narcotics when used to allay pain are called **Anodynes** or **Antalgics**. e.g. Preparations of Opium, Belladonna Acetanilid, etc.

- ANAESTHETICS**, - (a) General, - m.a. which produce a sedative effect on the nerve centres causing unconsciousness and insensibility to pain.

(b) Local, - effect limited to part to which applied.

- ANTISPASMODICS**, - m. a. which allay irregular muscular spasm or contraction, and compose the nervous system generally. (Wood), - weakness, nervousness, hysteria, convulsions, nervous excitability, hiccup, whooping cough, chorea, asthma, D. T's. - e.g. Musk, Valerian, Belladonna, etc.

- TONICS**, - m. a. which gradually and permanently raise the tone of the body or any of its organs. "Habit." Some tonics furnish needed material to the body, as Fe for anaemia -- others lessen tissue waste, - Quinine, Alcohol; others stimulate digestion as mineral acids and vegetable bitters; others by improving metabolism, as Arsenic; then again Hope, fresh air, cold water or salt baths.

- STIMULANTS**, - m. a. which raise the tone of the body rapidly but for a short time.

- SEDATIVES**, - m. a. which depress the various vital functions of the body.

- ANTIPERIODICS**, - m. a. which correct intermittant forms of disease.

ECORITICS

- DIAPHORETICS**, or **SUDORIFICS**, - m. a. which increase the action of the sudorific glands. e.g. Dover's Powder, a clean skin, exercise, vapor baths, etc.

- ANHIDROTICS**, - m. a. which decrease the action of the sudorific glands.

- ERRHINES**, - m. a. which increase the mucous secretions of the nasal passages.

- STIMULANTS**, - m.a. which increase the salivary secretions.
- EXPECTORANTS**, - m.a. which increase and modify the mucous secretions of the air passages.
- EMETICS**, - m.a. which cause a reversed muscular action of the stomach and oesophagus, and with it an increased mucous secretion in the stomach.
- STOMACHICS**, - m.a. which increase the functional activity of the stomach.
- LAXATIVES**, - m.a. which increase peristalsis and soften the faecies. e.g. figs, prunes, fruits, castor oil, etc.
- PURGATIVES**, - m.a. which hasten the evacuation of the bowels. e.g. Rhubarb.
- DRASTIC CATHARTICS**, - m.a. which cause a very rapid and watery evacuation of the bowels. - Jalop. *Pain*
- HYDROGOGUE CATHARTICS**, - m.a. which cause a large fluid secretion from the bowels. - Elaterium. *Team salt*
- CHOLAGOGUES**, - m.a. which increase the secretion of bile. - Podophyllin. (*Bile natum's laxative*)
- DIURETICS**, - m.a. which increase the urinary secretions of the kidneys.

HAEMETICS M.I.C.S.

- ALTERATIVES**, - m.a. which act obscurely through the agency of the circulation, correcting morbid conditions of the body, -- probably alter or modify nutritive processes.
- HAEMOSTATICS**, - m.a. which modify the constitution of the blood in such a way as to improve its power of coagulation.
- STYPTICS**, - m.a. which arrest hemorrhage by their astringent and coagulating properties. Mechanical and chemical.
- ANTACIDS**, - m.a. which neutralize the acidity of the stomach, and increase the alkalinity of the blood.
- REFRIGERANTS**, - m.a. which lower the body temperature and allay thirst. *Decrease heat already present.*
- ANTIPYRETICS**, - m.a. which reduce fever heat by checking tissue waste. *Decrease production of heat.*
- CARDIAC** -
- CARDIAC STIMULANTS**, - m.a. which increase the strength and rapidity of the heart's action. Ammonia, Alcohol, Digitalis.
- CARDIAC DEPRESSANTS**, - m.a. which have a sedative effect upon the heart's action. Tartar Emetic, Aconite.

TOPICAL

- IRRITANTS**, - m.a. which cause irritation to skin or other part to which applied.
- COUNTER IRRITANTS**, - m.a. which when applied to one part relieve pain, or correct some morbid condition in another part adjacent to it.
- RUBIFACIENTS**, - m.a. which cause redness and heat of the part to which applied. Hot water, mustard, capsicum, etc.
- VESICANTS**, - or Epispastics, - m.a. which have a rubifacient effect followed by the formation of a blister.
- CAUSTICS and ESCHAROTICS**, - m.a. which destroy living tissue by their chemical action upon it.
- ANTISEPTICS**, - m.a. which prevent the formation of putrifiactive and fermentative processes. (distinguish between anti- and a-septic)
- DISINFECTANTS**, - m.a. which destroy noxious products of decaying organic matter by altering them chemically.

GERMICIDES,- m.a. which destroy micro-organic life.
 ASTRINGENTS,- m.a. which cause contraction of living tissue to which they are applied. Mineral and vegetable.
 CARMINATIVES,- m.a. which dispel flatulence and allay pain in the alimentary tract.- usually contains a vol. oil which stimulates the mucous membrane of the stomach and intestine.
 DEMULCENTS,- or EMOLLIENTS,- m.a. which soften, relax and protect tissues to which applied.

METHODS OF ADMINISTERING DRUGS.

EXTERNAL:-

EPIDERMIC,- directly upon the skin, as liniments, blisters, poultices, etc.

ENDERMIC,- application of remedy after removal of the epidermis by a blister,-obsolete method,-slow and painful.

HYPODERMIC METHOD,- injection of medicine beneath the skin into the living tissues by means of the hypodermic syringe.

Advantages,-

- 1 -systemic effect of medicines attained three times as rapidly as by stomach.
- 2 -can be administered during unconsciousness.
- 3 -smaller amount of drug required. *4 -no action on the stomach*

Disadvantages,-

- 1 -painful, ²danger of injecting vein, ³range of medicines limited.

Precautions in the use of Hypodermic Syringe.

- 1 -agent must be soluble in water.
- 2 - " " non-irritating.
- 3 - " " require small dose.
- 4 -avoid having air in the syringe.
- 5 -avoid injecting a vein.
- 6 -have needle, interior of syringe, medicine and everything aseptic.

INTERNAL:-

INHALATION,- medicine absorbed by the mucous membrane of respiratory tract.

-medicine must be gaseous and non-irritant.-e.g.boiling water with resins, fumes of Stramonium, Amyl Nitrate, General Anaesthetics.

BY STOMACH,-'more convenient and safer.

- 1 -wide range of drugs.
- often unpleasant and nauseating (corrected by flavorings)
- often injurious to teeth, (alkaline mouth wash before and after dose.)
- digestion may alter nature of medicine before reaching circulation.

NOTE:- "Dose" signifies amount of drug usual or safe to be taken at one time for an adult man by the stomach.-for an adult female $\frac{7}{8}$ of a "dose".-for a child, a fraction represented by $\frac{\text{age}}{\text{age} + 12}$.

BY THE RECTUM,- in form of enemata or suppositories,-evacuant, nutriment, hemorrhoids.

THE MATERIA MEDICA.Headings under which Drugs will be considered.

- 1,- Name,- Latin or Technical, and Common names.
- 2,- Source and Preparation.
- 3,- Physical Properties.
- 4,- Physiological Actions.
- 5,- Therapeutic Value in Medicine.
- 6,- Therapeutic Value in Dentistry.
- 7,- Dose.
- 8,- General Remarks.

Every drug may have several physiological actions, but it will have one that will be its most x useful or most pronounced characteristic, and which may be considered its Specific Action. For the more intelligent study of the drugs, each will be considered in a group having the same or similar Specific Actions.

ANTISEPTICS, DISINFECTANTS and GERMICIDES.ACIDUM BORICUM.- Boric Acid, Boracic Acid, H_2BO_3 .

SOURCE,- action of Sulphuric Acid on Borax, or by purification of native Boric Acid.

PHYSICAL PROPERTIES,- colorless pearly scales, odorless, slightly bitter taste,- a weak acid.

Solubilities,- sol. 1 in 25 cold water, 1 in 3 boiling water, 1 in 5 glycerine, 1 in 16 spirit.

PHYSIOLOGICAL ACTIONS,- antiseptic, disinfectant, deodorant, destroys minute organisms, arrests fermentation,- not a germicide.

THERAPEUTIC VALUE IN MEDICINE,- a non-irritant antiseptic, - dressing for wounds, ulcers, burns, skin grafting, etc.- for all sensitive mucous surfaces where a non-irritant antiseptic is indicated, as the eye, the nose, etc.

THERAPEUTIC VALUE IN DENTISTRY,- antiseptic in mouth-washes,- injection of suppurating cavities,- combined with Sodium Sulphite for bleaching teeth,- antiseptic mouth-wash after extraction of teeth.

GENERAL REMARKS,-

Borax,- biborate of sodium, $Na_2B_4O_7$.-weakly alkaline,-

Soluble 1 in 22 cold water, 1¹/₂ in 1 glycerine.

Action similar to Boric Acid.

Preparations,- Borated Cotton, Borated Lint, Boroglycerine

H.C.Wood.

3/4 of 1 pr.ct.sufficient to prevent development of bacteria.

2 pr.ct. solution checked putrefaction of a solution of fibrin.

1 pr.ct. solution has kept muscle fibres fresh for many days.

ACIDUM CARBOLICUM,- Phenol, Phenic Acid, Phenyllic Alcohol,
C6H5OH.

Source,- from Coal tar, by fractional distillation and subsequent purification.-also made synthetically,- less odorous, less powerful as a germicide, more soluble in water.

Physical properties,- when pure, in form of needle shaped crystals which become an oily liquid at 95° , or upon the addition of Glycerine, Water or Alcohol,- Solubility,- 1 in 16 or 18 of Water, freely soluble in Alcohol, Chloroform, Ether, the Essential Oils, etc.

Strong characteristic odor, sharp sweet taste,-colorless, turning a reddish purple if it contains certain impurities.-discoloration does not impair its virtues. Coagulates albumen.

Physiological Actions,- Locally, Strong, Styptic, Escharotic. Dilute, Local Anesthetic, Germicide. Internally, Sedative and Carminative.

Therapeutic Value in Medicine,-

Internally,-small dilute doses for nausea due to irritable stomach.-as gargle for ulcerated sore throat.

Externally,-extensively used in antiseptic method of treating wounds,- Listerism.

Therapeutic Value in Dentistry,-

-relieves Odontalgia.

-recommended for the cavities of poorly calcified teeth where a portion of softened tissue is left in cavity and touched with strong Carb. Acid to coagulate albuminous elements in tubules,-(not so good as Nitrate of Silver).

-styptic in minute hemorrhages.

-for cauterizing gums near proximal cavities in Arsenical application.

-for devitalizing pulp or its living fragments by the pressure method. (Caution!)

-for sterilizing instruments.

-most effective remedy for canker spots.

Dose,-of the crystal, $1/4$ to 1 gr.,-of the fluid, 1 to 5 drop (dilute largely.)

General Remarks,-

-strongly resembles Creasote.

Symptoms of poisoning

-white eschar, corrugated on mucous membrane.

-burning pain from mouth to stomach.

-giddiness, loss of consciousness, collapse and death.

Treatment and Antidotes

-Olive Oil or Castor Oil. (Corrosive poisons call for Demulcents)

-Sodium Sulphate, Sodium Carbonate, Mag. Sulphate.

(form harmless compounds with Carb. Acid.)

-stomach pump, (Emetics seldom of use, vomiting centre paralyzed)

Robinson's Remedy.

Acidi Carbolici

Potassiae Causticae, Partes Equales, M. by tritulating in a mortar until a crystalline paste is formed.

CAMPHO-PHENIQUE, - Phenol Camphor.

SOURCE, - from Camphor and Phenol by warming Camphor gum with Phenol crystals till they become fluid, the proportions of each varying according to the degree of causticity desired, the more Phenol the more caustic. - usually about 1 part Phenol to 2 parts Camphor.

PHYSICAL PROPERTIES, - limpid volatile fluid, - colorless - odor of both constituents, - hot aromatic taste, - non-escharotic, - insoluble in water or glycerine, - soluble in alcohol, chloroform, ether and all oils, - claimed to be equal, as a germicide, to 1 in 85 HgCl_2 .

PHYSIOLOGICAL ACTIONS, - Germicide, Carminative, Stimulant, Loc. Anesthetic.

THERAPEUTIC VALUE IN MEDICINE, - as a dressing for burns and wounds, - reduces pain, prevents or controls suppuration.

THER. VALUE IN DENTISTRY, - as a canal dressing, - a vehicle for Arsenic, - injection for fistulae, - to relieve odontalgia, - a general purpose germicide and disinfectant, does not burn like oil of cinnamon, nor cauterize like carbolic acid.

DOSE, - i to 5 minims.

ARISTOL, -

SOURCE, - by adding a solution of I in KI to a solution of Sodium Hydrate containing Thymol.

PHYSICAL PROPERTIES, - reddish brown powder, odor of Thymol. - soluble in chloroform, ether and essential oils; insoluble in water and glycerine, - contains 46 per cent of I, - non-irritant and non-poisonous.

PHYSIOLOGICAL ACTIONS, - Antiseptic, (?) Prophylactic.

THER. VALUE IN MEDICINE, - having an agreeable odor it is used as a substitute for Iodoform to promote rapid healing, - a dusting powder in skin diseases.

THER. VALUE IN DENTISTRY, - substitute for Iodoform, - recommended by Kirk as ingredient for gutta percha and chloroform solutions, - not so good as Hydronaphthol.

IODOL, -

SOURCE, - by action of Iodine upon certain constituents of animal oils.

PHYSICAL PROPERTIES, - a grey brown crystalline powder, odorless, almost tasteless, - evolves Iodine when heated, - contains 89 per cent of I. Soluble in ether, chloroform, and alcohol.

PHYSIOLOGICAL ACTIONS, - Antiseptic, Disinfectant.

THER. VALUE IN MEDICINE, - substitute for Iodoform, without toxic effect.

THER. VALUE IN DENTISTRY, - being odorless, is used in place of Iodoform, - when used in the teeth it darkens them and is therefore objectionable.

DOSE, - not prescribed internally.

IODIFORM

SOURCE,- made from Iodine, Pot. Carb. and Alcohol.

PHYSICAL CHARACTERS,- small lemon colored scales,- powerful odor,-unpleasant sweetish taste,-contains 97% Iodine.
Soluble in alcohol, ether, chloroform and essential oils,
Insol. in water.

PHYSIOLOGICAL ACTIONS,- antiseptic (?) anodyne.

THER. VALUE IN MEDICINE,- as dressing for wounds, ulcers,
ill-conditioned sores and skin diseases.

THER. VALUE IN DENTISTRY,- with some essential oil on cotton
as a canal filling,- with Ol. Eucalyptus in treatment of
Pyrrhoea Alveolaris, and putrescent pulps.

DOSE,- 1 to 5 gr. (not given internally so much as formerly)

GENERAL REMARKS,- over doses or too large applications poisonous.

BENZOLINUM, - Gum Benzoin.

SOURCE,- a balsamic resin from the bark of the Styrax Benzoin.

PHYSICAL CHARACTERS,- small milk white tears buried in a mass
of bark, chips and dust,-agreeable balsamic odor,- very
little taste.

Soluble in alcohol, chloroform. Insoluble in water.

Contains Benzoic Acid and Cinnamic Acid.

PHYSIOLOGICAL ACTIONS,- disinfectant, stimulant, expectorant.

THER. VALUE IN MEDICINE,- Externally,- in form of Friar's
Balsam for ulcers, wounds, etc. to maintain asepsis and
promote healing. Internally, as an expectorant.

THER. VALUE IN DENTISTRY,- with Alcohol or chloroform as an
antiseptic varnish for the retention of cotton ~~xxx~~ dress-
ings in cavities,- with Canada Balsam dissolved in Chloro-
form as a non-conducting capping varnish.

CALX CHLORATA, - Chlorinated Lime. *caldo*

SOURCE,- hydrate of lime saturated with chlorine gas.

PHYSICAL PROPERTIES,- gray white powder, partially soluble
in water.

PHYSIOLOGICAL ACTIONS,- disinfectant, stimulant, bleaching
agent.

THER. VALUE IN DENTISTRY,- most important use in dentistry,-
Bleaching of discolored teeth, due to the liberation of
free chlorine gas which combines with the Hydrogen of the
aqueous moisture of the tooth, liberating Oxygen which is
the direct bleaching agent.

CREASOTUM, - Creasote, Oil of Smoke.

SOURCE,- from distillation of wood tar,- a combination of
various Phenols.

(Creasote Continued)

PHYSICAL PROPERTIES,- clear, or slightly yellowish,(if pure),- oily consistence,- characteristic smoke odor,-hot burning taste.

Solubility,- freely in Alcohol and Ether,-sparingly in water,- best Creasote made from beechwood.

PHYSIOLOGICAL ACTIONS,- germicide, escharotic, styptic, astringent, stimulant.

THER. VALUE IN MEDICINE,- gastric irritability, vomiting due to fermentation, Phthisis, etc.

THER. VALUE IN DENTISTRY,- relief of odontalgia,(household remedy),- injection for alveolar abscess,- vehicle for nerve paste, indicated where pulp will be very susceptible and a coagulant desired,- general disinfectant in the treatment of putrescent pulp canals.

DOSE,- 1 to 5 drops.

GENERAL REMARKS,- C. so long used as a household remedy for toothache that the odor of it in a dentist's office is associated with pain and suggests horrors to come.

Chemically, C. bears a strong resemblance to Carbolic Acid, and in its physiological action it has also much in common.

HYDRARGERI PERCHLORIDUM, - Mercuric Chloride, - Corrosive Sublimate.

SOURCE,- by subliming a mixture of NaCl and HgSO_4 .

PHYSICAL CHARACTERS,- heavy colorless crystalline masses,- odorless,- acrid styptic taste,-sublimes without residue.

Solubility,- 1 in 20 of water,- 1 in 5 of S.V.R.

PHYSIOLOGICAL ACTIONS,- germicide, alterative, purgative, diuretic, sialagogue, poison.

THER. VALUE IN MEDICINE,-

Externally,- germicide for surgical and other purposes.

Internally,- alterative in syphilis and other chronic affections.

THER. VALUE IN DENTISTRY,- gargle in chronic ulceration of the mucous membrane,- root canal dressing, injection for fistulous tract,- being an aqueous solution and a powerful germicide a small quantity suffices and is very diffusive.

DOSE,- 1/60 to 1/10 gr.

GENERAL REMARKS,- Hg of first therapeutic importance,-

Bruce gives 29 different preparations of Hg.- 1 in 20,000 a germicide.- a dangerous poison, because enough is swallowed easily before mistake is noticed. Should be no danger in treating dental fistulae,- a few drops only are needed,- it would require 100 drops of a 1 in 1000 solution to make 1/10 of a grain, the maximum dose.- being an aqueous solution, it is a more diffusible disinfectant in the tissues than the essential oils, Carbolic Acid, etc.

FORMALDEHYDE, - Formol, CH_2O .

SOURCE, - by the oxidation of Methyl Alcohol.

PHYSICAL PROPERTIES, - a gas, - dissolves readily in water or alcohol, - peculiar odor, resembling Hamamelis, - irritating taste.

Formalin, - trade-mark name for a 40 per cent solution of Formaldehyde in water.

PHYSIOLOGICAL ACTIONS, - germicide, deodorant, preservative.

THER. VALUE IN MEDICINE, - for sterilizing socks, garments, rooms, etc., after diphtheria, small pox etc., without injuring color or texture of the articles disinfected.

THER. VALUE IN DENTISTRY, - treatment of putrescent pulps.

DOSE, - not given internally.

GENERAL REMARKS, - feeble toxic properties and intense local irritation make danger of accidental poisoning very small.

- best preservative for pathological and anatomical specimens, - does not impair color.

- so irritating that it must be used with care on all soft tissues.

- second only to mercuric chloride in power as a germicide

- renders glue or gelatin insoluble in water, - therefore a valuable agent in which to treat sandpaper disks.

HYDROGEN PEROXIDE, - Hydrogen di-oxide, - H_2O_2 .

SOURCE, - by passing CO_2 through H_2O containing BaO_2 (Barium di-oxide)

PHYSICAL PROPERTIES, - when pure, a colorless syrupy liquid, - odor like chlorine or ozone, - tingling metallic taste, - not used undiluted in dentistry, - unstable compound, giving off nascent oxygen.

PHYSIOLOGICAL ACTIONS, - germicide, detergent and deodorant.

Ther. Value in Medicine, - dressing wounds, ulcers, abscess cavities. - "for inflammation of the mucous membrane, it is of the greatest value." (H.C.Wood)

Ther. Value in Dentistry, - antiseptic and detergent in Pyorrhea Alveolaris, - general styptic, - for treatment of alveolar abscess, (caution!) - stomatitis, - for bleaching teeth. (25 per cent Pyrozone best).

GENERAL REMARKS, - Pyrozone, trade-mark name for hydrogen di-oxide, - made in two forms, - 3 per ct. aqueous solution, and 25 per ct. ethereal solution.

- the term "volume," as for example, "10 vol. hydrogen di-oxide" signifies that one vol. of the solution contains ten volumes of hydrogen di-oxide gas.

HYDRONAPHTHOL

SOURCE, - proprietary preparation, - chemistry not well known, - supposed to be a form of Beta-Napthol, - made from coal tar.

PHYSICAL PROPERTIES, - light fawn colored crystals, - hot taste, resembling capsicum, - Solubility, - in water, 1 in 600, - in Alcohol and Chloroform, freely soluble.

(Hydronapthol con'd)

PHYSIOLOGICAL ACTIONS,- germicide, stimulant,- non-poisonous,
(Beta-Napthol is poisonous)

THER. VALUE IN MEDICINE,- disinfection of abcess cavities,-
antiseptic for alimentary canal in typhoid.

THER. VALUE IN DENTISTRY,- sterilization of instruments,- in
alcohol solution up to 25 per cent for sterilization of
cavities and canals,- as an injection for abcess cavities,-
antiseptic ingredient in Chlorapercha, and in varnishes,-
1 in 1100 a germicide, therefore an aqueous solution valu-
able as a mouth-wash,- Truman recommends it as a specific
in recession of the gums.

LIQUOR SODAE CHLORINATAE,- Solution of Chlorinated Soda, Labar-
raque's Sol.

SOURCE,- by decomposing a solution of Na_2CO_3 by a solution of
Chlorinated Lime.

PHYSICAL PROPERTIES,- greenish yellow transparent fluid,-
faint odor of chlorine,- sharp saline taste.

PHYSIOLOGICAL ACTIONS,- disinfectant, deodorant, astringent,
stimulant.

THER. VALUE IN MEDICINE,- seldom used internally in recent
years,- externally, in all forms of indolent ulcers.

THER. VALUE IN DENTISTRY,- in Mercurial Stomatitis,- ulcer-
ated gums,- fetid breath,-for deodorizing putrescent pulps.

DOSE,- 15-60 m. largely diluted.

GENERAL REMARKS,-

B - for fetid stomatitis.

Liquoris Sodae Chlorinatae

Myrrhae Tincturae

Mellis

aa 3ss

Aquae

3x M.

Signa,- Use as mouth-wash.

MENTHOL,- Japanese Campher.

SOURCE,- by fractional distillation from Oil of Peppermint.

PHYSICAL PROPERTIES,- small white crystals resembling Epsom
Salts,- odor of Peppermint,- Solubility,- sparingly in
water, freely in S.V.R., ether and glycerine.

PHYSIOLOGICAL ACTIONS,- anodyne, disinfectant, antispasmodic,
refrigerant.

THER. VALUE IN DENTISTRY,- facial neuralgia, odontalgia,
local anaesthetic.

DOSE,- 1/4 -- 1 gr.

GENERAL REMARKS,- not used internally to any great extent.

ACIDUM SALICYLICUM, - Salicylic acid.

SOURCE, - by the combination of the elements of carbolic acid with those of carbon-di-oxide and subsequent purification, - also prepared from oil of wintergreen.

PHYSICAL PROPERTIES, - white acicular crystals, - sweetish acid taste. Solubility, - 1 in 600 cold water, freely in hot water, alcohol and essential oils.

PHYSIOLOGICAL ACTIONS, - germicide and antipyretic.

THER. VALUE IN MEDICINE, - as an antipyretic in fevers, inferior to antipyrin, acetanilide, etc. - Local application for eczema, also to reduce perspiration of hands and feet.

THER. VALUE IN DENTISTRY, - with essential oils as a general purpose disinfectant.

DOSE, - 5--30 grs.

THYMOL

SOURCE, - from the oil of the thyme herb.

PHYSICAL PROPERTIES, - aromatic white crystals, sharp tingling taste.

Solubility, - 1 in 800 cold water, -freely in alcohol, ether, alkaline solutions.

PHYSIOLOGICAL ACTIONS, - germicide, stimulant.

THER. VALUE IN MEDICINE, - externally and for mucous surfaces as disinfectant and deodorant. Internally seldom used.

THER. VALUE IN DENTISTRY, - glycerole of thymol valuable in the treatment of putrescent pulps, alveolar abscess, etc. (Sealed in cavities for sensitive dentine,) - ingredient for nerve paste.

DOSE, - 1 to 2 grs.

ESSENTIAL, VOLATILE OR DISTILLED OILS

A few notes on Essential Oils and other oils

- essential oils usually composed of C and H.

- fixed oils are compounds of C, H and O.

- ess'l oils prepared by distillation, usually; some by expression; others by solution in a fixed oil.

- fixed oils are compounds of a fatty acid (oleic, stearic, palmitic, etc.) and the glyceryl daricle, C_3H_5 ; with caustic alkalis or metallic oxides they form soaps leaving glycerine.

Na hydrate + Oleate of glyceryl (veg. oil) = Oleate of Na (soap) + $C_3H_5(OH)_3$, glycerine, or hydrate of glyceryl.

- most E. Oils have a composition similar to turpentine, $C_{10}H_{16}$,

- essential oils prepared from various aromatic plants.

- antiseptics without coagulation.

- as a rule the more powerful antiseptics are the more irritating to the soft tissues.

- E. oils darken with exposure to the atmosphere, - combustible.

- E. oils liable to discolor teeth.

RELATIVE ANTISEPTIC POTENCY

OF SOME ESSENTIAL AND OTHER OILS.

To restrain development of bacteria in a unit of culture-media, there is required:-

of Oil of Cassia (pure)	2	parts
" " (as ordinarily sold)	3	parts.
Beechwood Creasote	5	"
Oil of Cloves	6	"
" " Sassafras	7	"
" " Peppermint	8	"
Black's 1-2-3 mixture	14	"
Acid. Carb.	18	"
Oil of Myrtol	19	"
" " Cajaput	60	"
" " Eucalyptus	60	"
" " Gaultheria	80	" (sat. sol.)
" " Eugenol	80	" " "

When sprayed on an infected sore on a guinea pig:-

Oil of Cassia sterilized sore but increased the irritation and extent of the sore.

Creasote, - irritation very slight, sore got better.

Oil of Cloves, - absolutely non-irritating, pus stopped, sore healed, "perhaps best for apical pericementitis" (Peck)

Black's 1-2-3 neither irritated nor cured sores.

Carb. Acid, - restraining effect lasted only 3 days.

Oil of Cajaput, - non-irritating.

" " Eucalyptus,

" " Gaultheria, - did not restrain development of bacteria, N.G.

Eugenol, - did not restrain development of bacteria, N.G.

OLEUM CINNAMOMI

SOURCE, - from the bark of the Cinnamon tree, - various varieties, - Cinnamomum Verum, (Ceylon), - Cinnamomum Cassia, (China), - not so fragrant as the Ceylon variety.

PHYSICAL PROPERTIES, - clear brownish liquid, - aromatic odor, - hot characteristic taste, - Solubility, - insol. in water, - freely in S.V.R.

PHYSIOLOGICAL ACTIONS, - germicide, stimulant, carminative.

THER. VALUE IN MEDICINE, - to relieve nausea and vomiting, - to conceal taste of other drugs, - to correct griping of other drugs.

THER. VALUE IN DENTISTRY, - ingredient in dentifrices, - general disinfectant.

DOSE, - 1 - 5 m.

OLEUM CARYOPHILLI, - Oil of Cloves.

SOURCE, - from the dry flower buds of a tree in India.

PHYSICAL PROPERTIES, - clear brownish yellow liquid, - hot aromatic taste, - Solubility, - sparingly in water, freely in alcohol, - heavier than water.

PHYSIOLOGICAL ACTIONS, - germicide, stimulant, carminative.

THER. VALUE IN MEDICINE, - stomachic, to increase the desire for, and improve the digestion of food, - to relieve flatulance, hiccough, - to correct taste of nauseating drugs.

THER. VALUE IN DENTISTRY, - to sterilize cavities, - as a disinfecting, stimulating, soothing and non-coagulating injection for fistulous tracts, - O. of Cloves does not discolor the teeth, - excellent vehicle for nerve paste.

DOSE, - 1 --- 5m.

GENERAL REMARKS, - Eugenol, or Eugenic Acid, a derivative of oil of cloves. E. is similar in action to O. of cloves, but not so strong.OLEUM EUCALYPTI.

SOURCE, - from the leaves of a tree originally of Australia, known as the Blue Gum tree, - now grown in America.

PHYSICAL PROPERTIES, - pale straw color, - odor resembling both turpentine and menthol, - pungent spicy flavor.

PHYSIOLOGICAL ACTIONS, - disinfectant, antipyretic and antiperiodic.

THER. VALUE IN MEDICINE, - Externally, - disinfectant, - Internally as an antiperiodic; not so good as Quinine.

THER. VALUE IN DENTISTRY, - disinfectant where irritation is to be avoided. Solvent for gutta serena.

DOSE, - 1 to 5 m.

GENERAL REMARKS, - Eucalyptus, an important ingredient of Listerine, Euthymol.

POTASSII PERMANGANAS, - $KMnO_4$ SOURCE, - from equal parts of MnO_2 and $KClO_3$ with excess of KOH.PHYSICAL PROPERTIES, - deep purple slender crystals, resembling Iodine, - no odor, disagreeable sweetish astringent taste, - solution in water makes a rich purple fluid, - Solubility, 1 in 16 of water, - gives up oxygen in presence of organic matter.

PHYSIOLOGICAL ACTIONS, - disinfectant and deodorant.

THER. VALUE IN MEDICINE, - as a dressing for foul ulcers, seldom used internally.

THER. VALUE IN DENTISTRY, - fetid ulcerations of the mouth, - diseases of the Antrum. offensive breath.

GENERAL REMARKS, - most important use is apart from the human body as a disinfectant of stools, cesspools, infected clothing, etc.

RESORCINUM, Resorcin, Resorsinol.

SOURCE, - chemical compound of the phenol group, - a derivative of carbohc acid.

PHYSICAL PROPERTIES, - tabular shining scales or crystals, - sweetish pungent taste, - Solubility, 95 in 100 of water, - less so in S.V.R.

PHYSIOLOGICAL ACTIONS, - disinfectant, diaphoretic, antipyretic.

THER. VALUE IN MEDICINE, - dressing for all kinds of sores and wounds, - found to be too depressing and debilitating for general systematic use.

THER. VALUE IN DENTISTRY, - wherever a disinfectant is needed.

DOSE, - 5 to 15 gr.

PHENOL SODIQUE, Liquor Sodii Carbolatis.

SOURCE, - a proprietary preparation, - formula about as follows: - Carbohc Acid, 8 parts; Caustic Soda, 4 parts; Water, 100 parts.

PHYSICAL PROPERTIES, - clear or light pink fluid, odor of carbohc acid, aromatic taste.

PHYSIOLOGICAL ACTIONS, - disinfectant, haemostatic, styptic, local anaesthetic.

THER. VALUE IN MEDICINE, - styptic dressing for local hemorrhage, burns, venomous bites, disinfectant in throat affections and diphtheria.

THER. VALUE IN DENTISTRY, - for hemorrhage after extraction, - gargle for soft spongy gums, - for fetid breath, - for hypersensitive dentine.

DOSE, - 2 to 10 m.

SODIUM DI-OXIDE, - Peroxide of Sodium.

SOURCE, - by adding H_2O_2 to caustic soda and then pouring into alcohol.

PHYSICAL PROPERTIES, - creamy white powder, - strong alkaline caustic, - Solubility, - freely in water, - when added to water it evolves heat and parts with its Oxygen, - strong bleaching agent, - H_2O_2 contains but 3 or 4 per cent of available bleaching Oxygen, Na_2O_2 contains 20 per cent together with its saponifying virtues.

PHYSIOLOGICAL ACTIONS, - germicide, deodorizer, bleaching agt.

THER. VALUE IN MEDICINE, - unsuited to soft tissues on account of its causticity.

THER. VALUE IN DENTISTRY, - a most successful bleaching and sterilizing agent, - especially valuable for pulpless teeth with putrescent canal contents, where the whole structure of the dentine is permeated and discolored with the offensive and fermenting mass of organic matter, and often with a blind abcess. - Flood chamber and canals with strong solution, - saponifies and dissolves fats and oils, - breaks down and oxidizes pulp shreds and other connective tissues.

DOSE, - not given internally.

GENERAL REMARKS, - the powder must be kept perfectly air tight or it will lose its Oxygen.

HAEMOSTATICS, STYPTICS AND ADTRINGENTS.

ALUMEN, - Alum, - $\text{Al}_2\text{K}_2(\text{SO}_4)_4$

SOURCE, - found native near volcanoes in Italy.

PHYSICAL PROPERTIES, - white salt, slightly efflorescent, astringent acid taste. - Solubility, - 1 in 10 cold water, 10 in 8 hot water, insoluble in alcohol, - acid reaction.

PHYSIOLOGICAL ACTIONS, - astringent, styptic, emetic, purgative.

THER. VALUE IN MEDICINE, - Externally, - relaxed or ulcerated conditions. Internally, - diarrhoea, catarrh of the stomach. - In large doses it is a purgative and an emetic.

THER. VALUE IN DENTISTRY, - gargle in stomatitis, ulcerated and spongy gums, saturated solution for hemorrhage, - unsuited for dentifrices as it liberates H_2SO_4 . Pulverized alum with Labarraque's Solution for bleaching teeth, - Dessicated Alum for mummyfying pulp.

DOSE, - 10 to 30 gr.

ACIDUM TANNICUM, - Tannic Acid.

SOURCE, - from nut galls.

PHYSICAL PROPERTIES, - light yellowish amorphous scales, odorless, astringent taste, acid reaction. - Solubility, - 10 in 8 of water or alcohol, 1 in 3 of glycerine. - Glycerite of Tannin.

PHYSIOLOGICAL ACTIONS, - astringent, styptic, disinfectant.

THER. VALUE IN MEDICINE, - hemorrhage from lungs and stomach, - chronic diarrhoea, - genito-urinary diseases, - skin diseases, - and external hemorrhage.

THER. VALUE IN DENTISTRY, - mercurial stomatitis, - for sensitive dentine in alcoholic solution, - glycerite of tannin for hemorrhage after extraction.

DOSE, - 2 to 10 gr.

GENERAL REMARKS, - T. Acid preferred to mineral astringents because it is non-irritant, (Alum , H_2SO_4), - its astringent properties depend upon its coagulating, solidifying and shrinking of the fluid elements of the tissues, - hence leather, - this shrinking of the tissues compresses the blood vessels, - hence its styptic action.

Taken internally it precipitates pepsin and lessens circulation, (tea is therefore bad for weak digestions).

Incompatibles, - gelatine, mineral acids, alkaloids, (therefore antidote for morphia, strychnine, etc. therefore tea in an emergency.)

ACIDUM CALLICUM.

SOURCE, - from nut galls, by boiling with dilute H_2SO_4 .

PHYSICAL PROPERTIES, - white silky needles, acid taste.

Solubilities, - 1 in 100 cold water; 1 in 3 boiling water; 1 in 8 of S.V.R., 1 in 20 glycerine. - does not coagulate albumen.

(ACIDUM GALLICUM CONT'D)

PHYSIOLOGICAL ACTIONS,- astringent, haemostatic.

THER. VALUE IN MEDICINE,-Locally, not so good as Tannic Acid.

Internally,-preferred when part is to be reached by the circulation, as it does not coagulate albumen, nor precipitate pepsin,- used for hemoptysis,(blood-spitting), hematemesis,(vomiting of blood),or any affection due to a hemorrhagic diathesis.

THER. VALUE IN DENTISTRY,- for hemorrhage from mucous surfaces, or from extraction due to a hemorrhagic diathesis.-
2 to 5 gr. every 3 or 4 hrs.

DOSE,- 2 to 10 gr.

B for hemorrhagic diathesis.	B for hemorrhagic diathesis
Acidi gallici 3ss	Acidi Gallici 3i
Tincturae hamamelis 3i	Spiriti vini rectificati
Spiriti vini rectificati 3i	Glycerine aa 3i
Glycerine 3i	Olei Gaultheriae gttxii
Olei Gaultheriae gttx	Aquam ad 3xii M.
Aquam ad 3iv M	Signa,- 3ss in water every
Signa,- 3ss in water every	four or five hours for a
four or five hours for one	couple of days before ex-
day before extracting.	tracting.

ACIDUM TRICHLORACETICUM

SOURCE,- a chlorine compound of Acetic Acid.

PHYSICAL PROPERTIES,- deliquescent crystals,- pungent odor,- very soluble in water and alcohol,-coagulates albumen.

PHYSIOLOGICAL ACTIONS,- astringent, germicide, escharotic, stimulant.

THER. VALUE IN MEDICINE,- escharotic for warts, venereal diseases and throat affections,- for putrid and indolent wounds,- the crystals produce a dry adhering eschar that is quickly thrown off,- no secondary effects,- non-irritating, and less painful than AgNO₃, a 2 per ct. solution destroys all organic life.

THER. VALUE IN DENTISTRY,- to remove overhanging gum tissue,- to check bleeding and moisture about a tooth,(minute quantity of saturated sol.) In pyorrhoea pockets, about 10 per cent solution.- as an injection for fistulous tracts of stubborn abscesses,- to restore tone to relaxed and flabby gum tissue about the necks of teeth,- to staunch bleeding of a newly extracted pulp, about 25 per cent or 30 per ct solution,-with H₂O₂ in pumice stone for cleaning teeth.

DOSE,- not used internally as yet.

TINCTURA HAMAMELIS, - Tincture of Witch Hazel, Pond's Extract.

SOURCE,- from the bark and leaves of the Witch Hazel shrub.

PHYSICAL PROPERTIES,- clear colorless fluid,- agreeable odor, astringent bitter taste.

PHYSIOLOGICAL ACTIONS,- astringent, hemostatic, anodyne, sedative.

(Tinctura Hamamelis Cont'd)

THER. VALUE IN MEDICINE, - for bleeding from nose, piles etc., astringent for bruises, sprains, pharyngitis, nasal catarrh, - given by the mouth for dysentery, hemorrhage of the lungs, - Its value as a remote hemostatic disputed.

THER. VALUE IN DENTISTRY, - soothing astringent mouth-wash after removing tartar, about 1 in 10 of water. Given internally for hemorrhagic diathesis.

DOSE, - 1-2 f3.

KRAMERIA, - also various preparations, tincture, extract, infusion.

SOURCE, - from the root of a shrub in Peru.

PHYSICAL PROPERTIES, - nearly odorless and tasteless, - contains 40 per ct. tannic acid whose action it resembles.

PHYSIOLOGICAL ACTION, - astringent.

THER. VALUE IN MEDICINE, - dysentery, hemorrhages, - as an enema for piles.

THER. VALUE IN DENTISTRY, - tincture used in lacerated and spongy gums, - the removal of tartar, - as an astringent in dentifrices and mouth-washes.

DOSE, - of the tincture, 1 to 2 f3

MYRHA, - also the tincture and other preparations.

SOURCE, - exudation from a small shrub in Arabia.

PHYSICAL CHARACTERS, - reddish brown masses, translucent, bitter aromatic taste, - Tincture, a clear yellowish fluid, disagreeable burning taste.

PHYSIOLOGICAL ACTIONS, - astringent, stimulant, expectorant.

THER. VALUE IN MEDICINE, - catarrh, asthma, inflamed and bruised surfaces.

THER. VALUE IN DENTISTRY, - inflamed, ulcerated and spongy gums, - mercurial stomatitis, - astringent in mouth-washes and dentifrices.

DOSE, - of the powder 5 to 30 grs.

of the tinct. 15 to 60 m.

PLUMBI ACETAS, - Acetate of Lead.

SOURCE, - action of acetic acid on lead oxide. From the acetate is made the subacetate, and from the subacetate is made "Lead water" or Goulard Extract.

PHYSICAL PROPERTIES, - brilliant acicular crystals, white, efflorescent, sweet astringent taste, odor of acetic acid.

PHYSIOLOGICAL ACTIONS, - astringent, haemostatic, sedative and Poison.

THER. VALUE IN MEDICINE, - dysentery, diarrhoea, cholera, erysipelas, skin diseases, - for bleeding from the stomach, bowels and lungs.

THER. VALUE IN DENTISTRY, - as lead water to relieve inflamed gums and mucous membrane, - as a basis of a lotion to antagonize the approach of abscess that threatens to point on the cheek.

(Plumbi Acetas cont'd)

DOSE,- 1 to 5 gr. Lead water not given internally.

GENERAL REMARKS,- all tissues take up lead freely from the circulation and retain it obstinately, "Plumbism" (Iodides)-
 Action of Lead Salts on Mucous Membrane, wounds, ulcers, etc
 1-precipitates albumen of mucous fluids or discharges.
 2-coagulates protoplasm of young cells of superficial layer.
 3-actively contracts arteries and veins of part, diminishing or even arresting circulation in them and preventing escape of plasma and cells.
 4-nerves depressed.

B - Lotion for inflamed surfaces.

Plumbi Acetas 3i

Tincturae Opii 3i

Aquae Oi M.

Signa,- apply as compress to inflamed part.

ADRENALIN CHLORIDE.

SOURCE,- a proprietary preparation, (P.D. Co.) from the adrenal or suprarenal gland. Prepared for the profession one part Adrenalin to 1000 parts normal salt solution containing 5 per cent Chloretone.

PHYSICAL PROPERTIES,- a clear fluid, non-irritating, having the taste of Chloretone.

PHYSIOLOGICAL ACTIONS,- Powerful astringent, haemostatic, styptic.

THER. VALUE IN MEDICINE,-styptic, to reduce congestion on mucous surfaces,-as a hypodermic injection in heart failure.

THER. VALUE IN DENTISTRY,-checking small troublesome hemorrhages.

A L T E R A T I V E S .

"There are employed by practitioners of medicine, to affect certain diseases most intimately connected with the processes of nutrition, various substances which do not, at least in the doses commonly used, produce any very obvious symptoms. These drugs may perhaps neither stimulate nor depress, so far as can be perceived, any function of the body; their action may be silent and imperceptible, their mode of influence may be unknown; but their therapeutic effects are among the most assured of clinical facts. It is to medicines of this character that the name "Alteratives" has been applied, because when administered they simply alter morbid processes." (Wood)

ACIDUM ARSENIOSUM, - White oxide of Arsenic, "Arsenic," As_2O_3 .

SOURCE,- native As not used in medicine, but the As_2O_3 , which is prepared from arsenical ores by roasting and is purified by subliming.

PHYSICAL PROPERTIES,- though an anhydride, arsenious acid is not a true acid. Solubility,- will dissolve in cold water, after some hours, to the extent of 25 per ct. (Bloxam), more soluble in a solution of borax (Coney) It is readily soluble in solution of Na_2CO_3 , and in solutions of the caustic alkalis. Soluble, 20 per ct. in glycerine. (Klever).

(Arsenic Cont'd)

PHYSIOLOGICAL ACTIONS,- Externally,- antiseptic, irritant caustic. Internally,- alterative, tonic, antiperiodic, Poison.

THER. VALUE IN MEDICINE,- Externally,- for destroying small growths as, Epithelioma etc. A small application is absorbed; a large one sets up such violent inflammation that absorption is prevented.

Internally, in intermittant diseases, rheumatism, to stimulate the appetite, for anaemia where iron fails.

THER. VALUE IN DENTISTRY,- as a pulp devitalizer, introduced by Dr. Spooner of Montreal.

DOSE,- 1/60 to 1/10 gr. (with or after meals)- nothing to do with amount necessary for devitalizing a tooth pulp.

GENERAL REMARKS,- Arsenic enters all organs and tissues but is rapidly excreted,- while it remains it strongly influences metabolism,- hence general tonic and alterative.
 - improves appetite and both quantity and quality of secretions. - accumulative,- watch for symptoms of poisoning.
 - 1/2 gr. has caused poisonous symptoms, 2 gr. have caused death.

Toxic Symptoms,-

- dryness of mouth and fauces.
- intense thirst.
- oppressed breathing,
- violent vomiting,
- rapid and feeble heart,
- intestinal irritation,
- burning sensation at epigastrium.
- involuntary evacuations,
- suppressed or bloody urine.
- shrunken features,
- retracted abdomen,
- general collapse,
- consciousness retained to the end,- death amid convulsions followed by rigid spasm of the whole body.

Treatment,-

Antidote,- Hydrated sesqui-oxide of iron, freshly precipitated by the addition of Magnesia to any Iron solution,- given ad lib,- Ammonia, lime water, milk, raw eggs, stomach pump, artificial breathing.

Notes on Dental Uses.

- arsenic causes inflammatory hyperaemia of the pulp,- vessels expanded,- tendency to thrombosis and embolism of capillaries.
- arsenic is nearly always taken up into the circulation of the tooth, causing granular detritus of the contents of the vessels.
- arsenic does not coagulate the tissues.
- Millar's experiments with tails of mice.
- with and without rings at the root of the tails.
- with and without plaster of Paris encasement.
- without ring, enormous edema of tail, sensory paralysis of hind limbs, complete anesthesia of tail in 48 hours.
- with ring, action of the As accelerated,- action of the As did not go beyond the ring. (40 cases)
- addition of plaster case made no appreciable difference.

(Arsenic Cont'd)

Inference:

- small portion of the As taken up by the pulp.
- violent reaction in vessel walls which dilate to their utmost.
- extravasation of corpuscles.
- circulation checked at the apical foramen so that the As is not carried beyond the foramen.
- As paralyzes the nerve either by its specific action on it or by the intense hyperaemia induced.
- strangulation theory good only in sudden and entire death of the pulp.
- gradual action seems to be the most common.
- great danger in applying As to immature teeth and temporary teeth where resorption is commenced.
- pulp nodules often render the action of As nearly nil.
- time necessary for the death of the pulp 12 hours to a week or more, according to age, temperament, density and amount of intervening dentine, and condition of pulp vitality.
- inflamed pulp resists As therefore reduce the inflammation with anodyne previously. (Orthoform)
- avoid pressure on the pulp when applying As.
- where a layer of dentine or pulp nodules intervene between pulp and As. avoid use of escharotics in the paste, - incorporate glycerine. - too large an application only increases pain.

Accidents with As and Treatment:

- accidents may be guarded against where there is danger of the As leaking onto the soft tissues by cauterizing the adjacent gum tissue by removal of any hypertrophied tissue reaching into the cavity and cauterization of the wound, by interposing gutta percha between the exposure and the gum tissue, or if necessary by forming a special cavity.
- when soft tissue has been poisoned by As it turns a deep purple and becomes swollen, finally sloughs away.
- when poisoning is manifest,
- cut away all dark and swollen tissue as it will slough away anyway; in so doing the As may be removed and the consequent bleeding will assist in removing the poison. The further treatment depends upon the chemistry of As in regard to its solubilities. - very insoluble in cold water, (1 in 400), more sol. in hot water, still more in a borax sol., and very much more in a hot sol. of sodium carbonate, and most sol. of all in glycerine (1 in 5). Therefore, after removing the poisoned soft tissues saturate with glycerine and then wash with a stream of a hot sol. of either borax or sodium carbonate and finally pack with $\text{Fe}_2(\text{OH})_6$ (hydrated sesquioxide of Iron).

Note.

Bunsen, to discover the best antidote for As poisoning, made multitudes of experiments to find an agent that wouldn't be poisonous to the human stomach, and at the same time would combine with As_2O_3 to form an insoluble, and therefore a non-poisonous compound, with the result that he found that $\text{Fe}_2(\text{OH})_6$ freshly precipitated by the action of MgO of Fe_2Cl_6 forms an arsenite of Iron that is extremely insoluble. The $\text{Fe}_2(\text{OH})_6$ must be in large excess as the tendency of As_2O_3 to form basic salts is very great, and basic ferric arsenite yields As_2O_3 to water. Bunsen says that there should be at least 14 times as much $\text{Fe}_2(\text{OH})_6$ as As_2O_3 .

(Arsenic cont'd)

Formulae

B Acidi Arseniosi

Morphinae Acetatis $\bar{a}\bar{a}$ partes aequales.

Acidi Carbolici q.s. fiat pasta

(Old formula objection, - Carb. Acid coagulates.)

B Acid. Arsen.

Morph. Acet. $\bar{a}\bar{a}$ part. eq.

Olei Caryophilli q.s. ft. pasta

(Ol. Caryoph. non-coagulating, therefore better for a general purpose agent.)

POTASSII IODIDUM, - Potassium Iodide, KI.

SOURCE, - by treating aqueous solution of Potassa with I.

PHYSICAL PROPERTIES, - white crystals, - acrid taste, Soluble 4 in 3 of H_2O .

PHYSIOLOGICAL ACTIONS, - Alterative, stimulant, tonic, expectorant.

THER. VALUE IN MEDICINE, - treatment of glandular enlargements, secondary and tertiary syphilis, to remove lead or mercury that have become intimately associated with the tissues, an expectorant in bronchitis.

THER. VALUE IN DENTISTRY, - mercurial stomatitis, neuralgia, convulsions due to dentition, looseness of teeth and spongy gums due to salivation.

DOSE, - 2 to 10 gr.

GENERAL REMARKS, - Given internally where systematic action of Iodine is desired.

HYDRARGERI CHLORIDUM MITE, - mild chloride of mercury, calomel, Hg_2Cl_2 .SOURCE, - by subliming mercurous sulphate with E NaCl, then washing with hot water to remove all traces of $HgCl_2$.

PHYSICAL PROPERTIES, - white colorless tasteless powder, insol. in water.

PHYSIOLOGICAL ACTIONS, - alterative, purgative, diuretic, sialogogue.

THER. VALUE IN MEDICINE, - syphilis, skin diseases, diarrhoea.

THER. VALUE IN DENTISTRY, - of no direct use, but of great interest on account of its action on mouth and teeth.

DOSE, - $\frac{1}{4}$ to 1 gr. (alterative)

1 " 5 " (purgative.)

GENERAL REMARKS, -

Symptoms of Salivation.

- after any mercurial salt has been administered for a considerable time the patient becomes salivated.

- saliva and buccal mucous flow profusely, ropy and viscid.

- breath fetid.

- teeth sore when tapped with instrument.

- disagreeable metallic taste.

- gums soft and swollen and bleed easily.

- tongue swollen.

- teeth loosened in their sockets.

- salivary glands enlarged.

- if drug is discontinued the symptoms disappear, but recession of the gums and absorption of the process usually follow.

Symptoms of mercurial poisoning, -

- burning pain in the mouth and stomach, - nausea, vomiting of bloody mucous, diarrhoea, cramps, convulsion, coma, death.

Antidote, - emetic of $CuSO_4$ (10 gr.), Effluvia drinks

IRRITANTS, COUNTER-IRRITANTS, RUBEFACIENTS,
VESICANTS, CAUSTICS AND ESCHAROTICS.

ACIDUM HYDROCHLORICUM, - Mariatic acid, HCl .

SOURCE, - action of sulphuric acid on sodium chloride.

PHYSICAL PROPERTIES, - transparent colorless liquid, - emits white vapor, - pungent odor, - powerful caustic acid.

PHYSIOLOGICAL ACTIONS, - Internally, - Dilute, - tonic, refrigerant, astringent stomachic.

Externally, fort. - caustic, escharotic, disinfectant.

THER. VALUE IN MEDICINE, - dyspepsia, (any acid assists digestion, but HCl is the natural acid medium of pepsin.)

THER. VALUE IN DENTISTRY, - dissolving zinc for flux for soft solder, - with HNO_3 to form aqua regia.

DOSE, - 10 to 30 gtts. (dil.)

ACIDUM NITRICUM, Aqua fortis, HNO_3

SOURCE, - action of sulphuric acid on sodium or potassium nitrate.

PHYSICAL PROPERTIES, - colorless fuming liquid, - strongest of the strong acids.

PHYSIOLOGICAL ACTIONS, - Externally, strong, - escharotic.

Internally, Dilute, - tonic, alterative (chologogue), refrigerant.

THER. VALUE IN MEDICINE, - with HCl as a general digestive tonic, (very destructive to the teeth), - in calculus diseases as a solvent for the phosphatic calculi.

THER. VALUE IN DENTISTRY, - with HCl as solvent for gold, - caustic for cancrum oris, - "pickle" for lead, bismuth, etc.

DOSE, - 10 to 30 gtts (dil)

ACIDUM PHOSPHORICUM, - H_3PO_4 , - Glacial phosphoric acid, HPO_3

DENTAL USE, - the glacial form is used in making the fluid for oxyphosphate of zinc filling.

ACIDUM SULPHURICUM, - Oil of Vitriol, H_2SO_4 .

SOURCE, - from sulphur and nitre burned over water.

PHYSICAL PROPERTIES, - colorless liquid, oily consistence, very corrosive, intensely acid, very heavy, strong affinity for water. }

PHYSIOLOGICAL ACTIONS, - Fort., escharotic.

Dilute, - tonic astringent, refrigerant.

THER. VALUE IN MEDICINE, - Externally, as a wash for ulcers, (astringent). Internally, - diarrhoea, hemorrhage of the bowels, refrigerant in fevers.

THER. VALUE IN DENTISTRY, - caustic for malignant ulcers, - for the Callahan method of cleansing, disinfecting and enlarging pulp canals. - with water as pickle in laboratory for removing oxides and borax from gold and silver.

DOSE, - 10 to 30 gtts. (dil.)

ACIDUM SULPHURICUM AROMATICUM

SOURCE,- R

Acidi Sulphurici f3iij
 Pulveris Cinnamon 3ij
 Pulveris Zingiberis 3j
 Spiriti vini rectificati Oij by maceration and digestion.

PHYSICAL PROPERTIES,- reddish brown liquid, aromatic odor, pleasant taste,- 1 in 10 of H_2SO_4 .

PHYSIOLOGICAL ACTIONS,- astringent, caustic, disinfectant, tonic, stimulant.

THER. VALUE IN MEDICINE,- substitute for dil. sulph. acid.- for caries of bone.

THER. VALUE IN DENTISTRY,- for pyorrhoea alveolaris,- astringent mouth-wash in Stomatitis,- caries and necrosis of the maxillary bones,- cleaning stains from teeth.

DOSE,- 5 to 30 m.

ARGENTI NITRAS, Lunar caustic.

SOURCE,- by dissolving silver in nitric acid and evaporating.

PHYSICAL PROPERTIES,- heavy colorless crystals,- metallic styptic taste,- Soluble 2 in 1 of water,- 1 in 5 of S.V.R.

PHYSIOLOGICAL ACTIONS,- escharotic astringent antispasmodic tonic sedative.

THER. VALUE IN MEDICINE,- Externally,- in bites of venomous animals, post-mortem wounds,- removal of small growths,- unlike caustic potash, its action is not diffusive and therefore not painful.

THER. VALUE IN DENTISTRY,- for sensitive dentine around the necks of teeth, where darkening will not be seen,- to cauterize and harden the floor of large cavities (40 pr ct. sol. best)-for white softened enamel of wisdom teeth.

DOSE,- 1/6 to 1/2 gr.

GENERAL REMARKS,- NaCl the antidote for $AgNO_3$ poisoning.

AURI TERCHLORIDUM, Chloride of Gold.

SOURCE,- by dissolving gold in aqua regia.

PHYSICAL PROPERTIES,- ruby red prismatic crystals, styptic taste,- Soluble in water, S.V.R. and other.

PHYSIOLOGICAL ACTIONS,- styptic, escharotic, disinfectant.

THER. VALUE IN MEDICINE,- syphilis, dyspepsia.

THER. VALUE IN DENTISTRY,- for sensitive dentine,- acts like $ZnCl_2$ but more promptly and with less pain.

DOSE, 1/60 to 1/10 gr.

IODUM, Iodine.

SOURCE,- from the ashes of seaweed.

PHYSICAL PROPERTIES,- bluish black crystalline scales,- peculiar odor. Solubility,- 1 in 1000 of water, 1 in 12 S.V.R., freely sol. in solutions of KI. Hence various preparations such as the tincture, liniment, ointment etc. contain KI.

(Iodine continued)

PHYSIOLOGICAL ACTIONS,- irritant, disinfectant, alterative, stimulant, tonic, expectorant.

THER. VALUE IN MEDICINE,- treatment of glandular enlargements, foul ulcers, vegetable parasites.

- counterirritant in inflammation of joints, periostium, glands, pleurae, etc.

- where the constitutional effect is desired KI is used, being less irritant and more soluble (4 in 3 of H_2O).

THER. VALUE IN DENTISTRY,- with aconite as counter-irritant in periostitis.

- for pulpless deciduous teeth.

- for pus sockets in pyorrhoea.

DOSE,- $1/4$ to 1 gr. of the crystal after meals on account
2 to 10m. of the tincture) of irritation.

GENERAL REMARKS,-

Notes on Physiological Actions,-

Iodine in some way accelerates tissue change,- lymphatic glands reduced in size; hence use in scrofula and other glandular enlargements, (I externally, KI internally.)

- such poisons as Pb and Hg that have become intimately connected with the tissues, or their albuminous elements are driven from the system with I.

- I is a specific in tertiary syphilis where Hg can no longer be given.

- I is also a valuable expectorant.

ZINCI CHLORIDUM, $ZnCl_2$.

SOURCE,- action of HCl on Zn.

PHYSICAL PROPERTIES,- white deliquescent crystals or rods,- caustic metallic taste,- Solubility, 10 in 4 of water.

Freely sol. in ether and alcohol.

PHYSIOLOGICAL ACTIONS,- escharotic and germicide.

THER. VALUE IN MEDICINE,- for malignant growths, obstinate ulcers,- seldom used internally.

THER. VALUE IN DENTISTRY,- sensitive dentine,- a drop of deliquesced chloride to the dentine of a dried cavity,- steady continuous pain, not throbbing,- when pain ceases, excavate,- avoid using close to the nerve.- $ZnCl$ is a deeply penetrating coagulant and very painful to the soft tissues if used in any strength.

- ingredient of oxychloride filling.

DOSE,- $1/4$ to 1 gr.

ANAESTHETICS.CHLOROFORM, CHCl_3

SOURCE,- by distillation of Alcohol with Chlorinated Lime.

PHYSICAL PROPERTIES,- colorless volatile liquid, -1 1/2 times heavier than water,- pungent sweetish odor,- hot aromatic taste,- Solubility, Sparingly in water, freely in Alcohol, or ether.

PHYSIOLOGICAL ACTIONS,- anaesthetic, anodyne, antispasmodic, carminative.

THER. VALUE IN MEDICINE,- general anaesthetic, in operations attended with pain, or muscular spasm, as in hernia, dislocation, parturition, calculus pains, etc.-Antispasmodic in nausea, flatulant colic,-as an ingredient in many liniments.

THER. VALUE IN DENTISTRY,- general anaesthetic, solvent for gutta percha and other gums. Of no value for drying a surface.

DOSE,- 1 to 5 m.

GENERAL REMARKS,- If allowed to evaporate on a surface it produces a sense of coldness, depresses the sensory nerve terminals,-therefore it is an anodyne. If confined to a surface it causes redness and vesication.

ETHER, -Ethyl Oxide, Sulphuric Ether, $(\text{C}_2\text{H}_5)_2\text{O}$. Any oxide of a hydrocarbon radicle is an ether.

SOURCE,- by distilling S.V.R. with H_2SO_4 .

PHYSICAL PROPERTIES,- colorless volatile liquid, strong peculiar odor, hot taste, evaporates rapidly, boils below 105 F.-very inflammable (its vapor had ignited 8 ft. away)

PHYSIOLOGICAL ACTIONS,- anesthetic, antispasmodic, stimulant, carminative, refrigerant.

THER. VALUE IN MEDICINE,- general anesthetic.

THER. VALUE IN DENTISTRY,- anodyne in neuralgia, spray for freezing, solvent for gums.

DOSE,- 15 to 60 m.

GENERAL REMARKS,-stage of stimulation or excitement more protracted than with Chloroform, more struggling, anesthesia less profound and shorter. Ether depresses the heart and vessels less than Chloroform,- respiratory centre less depressed. Ether is therefore the safer anesthetic. Statistics seem to show that C. is about 5 times as dangerous as E.

- Under certain circumstances C. is indicated in spite of its greater danger.

- operation about the mouth,-Ether causes a profuse and copious saliva.

- in operations that must be done hastily.

- in operations where the cautery or light might ignite the vapor.

- in parturition, where profound anesthesia is unnecessary

COCAINAE HYDROCHLORAS

SOURCE,- from the alkaloid of Coca leaves.

PHYSICAL PROPERTIES,- there are other salts, but the hydrochlorate is generally used,- most easily prepared and lasts

(Cocainae Hydrochloras Cont'd.)

longer,- colorless acicular prisms,- sol. in water or alcohol,-bitter taste,-tongue rendered numb.

PHYSIOLOGICAL ACTIONS,- local anesthetic, stimulant, styptic.
THER. VALUE IN MEDICINE,- used internally for some forms of mental and nervous diseases,- for operations on the eye, ear, nose, throat, rectum, urethra and for superficial operations generally.

THER. VALUE IN DENTISTRY,- for operations on the mucous membranes of the mouth,- for extraction of teeth by infiltration method,- for the extirpation of the dental pulp. Individual susceptibility to toxic effects of cocaine surrounds its use with great risk in spite of all antidotal precautions.

DOSE,- 1/4 to 1 gr. 1/2gr. often produces dangerous symptoms.
GENERAL REMARKS,- simple solutions in water liable to form fungi and cause the destruction of the solution,- prevented by the addition of Boracic Acid.

B for a 5 pr ct. sol. of cocaine.

Cocainae Hydrochloratis grxxiv

Acidi Boracici grx

Aquae Destillatae 5j M.

Death has been caused by as low as 12 drops of a 4 pr ct. sol. hypodermically.

Dangerous symptoms have been caused by one drop of a 1 pr cent sol.

Symptoms of Poisoning:

- nausea, rapid imperceptible pulse, great perspiration, extreme pallor, collapse, sometimes followed by mania.

Treatment:

- rouse the heart, stimulants, Aromatic Spirits of Ammonia, Amyl Nitrite, artificial respiration, 5 to 10 minims of Liq. Strychninae hypodermically.

EUCAINE

SOURCE,- synthetic alkaloid.

PHYSICAL PROPERTIES,- white odorless crystals, bitter taste, soluble in water, chloroform or ether.

PHYSIOLOGICAL ACTIONS,- local anesthetic.

THER. VALUE IN MEDICINE,- local anesthesia,- causes hyperaemia instead of anaemia,- considered to be 4 or 5 times less poisonous than Cocaine.

THER. VALUE IN DENTISTRY,- 2 to 4 per cent sol. used in distilled water,- boiling does not decompose it.

GENERAL REMARKS,- In administering this and other local anesthetics it is well to have the patient take a drachm of Aromat. Spirits of Ammonia in water a few minutes previously

ETHYL CHLORIDEETHYL CHLORIDE, C₂H₅Cl.

SOURCE,- a by-product in the manufacture of Chloral.

PHYSICAL PROPERTIES,- a gas at ordinary temperatures,- easily compressed into a colorless liquid resembling ether in odor and taste,- very volatile,- rapid evaporation causes extreme cold and numbness.

PHYSIOLOGICAL ACTIONS,- local and general anesthetic.

(Ethyl Chloride Cont'd)

THER. VALUE IN MEDICINE,- minor and local surgery.

THER. VALUE IN DENTISTRY,- local anesthetic for the extraction of teeth,- opening of abscesses,- obtunding pulp for extirpation,- for obtunding sensitive dentine.(danger of causing death to the pulp.)

GENERAL REMARKS,- inhalation of its vapor causes general anesthesia, but its safety as such has not been demonstrated. Therefore have patient breathe through the nose. Guard against having any light near by.

STIMULANTS.

SPIRITUS VINI RECTIFICATUS, S.V.R., Alcohol, C_2H_5OH , Ethyl Alcohol.

SOURCE,- prepared from fermented saccharine substances,- CO_2 is given off and C_2H_5OH remains largely diluted with water,- repeated distillation reduces the water to about 16 per cent.

Absolute Alcohol,- S.V.R. shaken with K_2CO_3 ; decanted; macerated and shaken with fresh $CaCl_2$; and finally distilled; contains but 2 per cent of H_2O .

Spiritus Vini Gallici,- French Brandy; distilled from French wine.

Proof Spirit,- contains 49 per cent of Alcohol.

PHYSICAL PROPERTIES,- a clear, colorless, limpid fluid, inflammable,-unites in all proportions with water, Chloroform. Ether; has strong affinity for water.

PHYSIOLOGICAL ACTIONS,- stimulant, astringent, refrigerant, disinfectant.

THER. VALUE IN MEDICINE,- stimulant to tide the body over a crisis such as Pneumonia, Bronchitis and other acute inflammations,- in small doses it improves the appetite and digestion in failing old age and convalescents,- in excess it precipitates pepsin,- as a lotion for ulcers, wounds, bed sores etc. to harden and disinfect the epidermis.

THER. VALUE IN DENTISTRY,- to dry cavities, with tannic acid for sensitive dentine,- solvent for gums.

DOSE,- ad lib.

NOTES ON PHYSIOLOGICAL ACTIONS,-

Locally,-refrigerant, due to rapid evaporation.

astringent,- due to coagulation of albumen and affinity for H_2O .

Internally,- On the brain and nervous system,- first stimulates the cerebral centres and even the spinal centres; then depresses them; hence loss of muscular co-ordination, hence stagger, and seeing double.

On Heart and Circulation,-

- small doses stimulate.

- large doses stimulate.

- vessels become universally dilated.

- skin flushed with a sense of heat.

- body heat lost through radiation and evaporation of perspiration.

- metabolism diminished, thus saving tissue waste; therefore of use in fevers and inflammations.

(Spiritus Vini Rectificatus, Cont'd).

On Respiration and Temperature:-

- the amount of CO_2 exhaled diminished.
- temperature lowered.

On Secretory Organs,- sweat glands stimulated, urea reduced.

AMMONIA, NH_3 .

SOURCE,- from the ammoniacal liquor of gas works.

PHYSICAL PROPERTIES,- colorless gas; pungent irritating odor, very soluble in water.

PHYSIOLOGICAL ACTIONS,- stimulant, antacid, carminative.

THER. VALUE IN MEDICINE,- stimulant in syncope.

THER. VALUE IN DENTISTRY,-

DOSE,- 5 to 30 m.

AMMONII CARBONAS, Hartshorn, Sal volatile.

SOURCE,- by subliming a mixture of NH_4Cl and CaCO_3 .

PHYSICAL PROPERTIES,- a salt with pungent odor and alkaline taste.

PHYSIOLOGICAL ACTIONS,- stimulant, diaphoretic, expectorant, antacid.

THER. VALUE IN MEDICINE,- externally as a smelling salt for syncope; - internally where vital powers are greatly depressed, as Pneumonia.

THER. VALUE IN DENTISTRY,- in case of fainting in chair.

DOSE,- 2 to 10 gr.

GENERAL REMARKS,- the basis of almost all smelling salts, also of Aromatic Spirits of Ammonia.

SPIRITUS AMMONIAE AROMATICUS

SOURCE,- Ammonium Carbonate	34 parts
Ammonia Water	90 "
Oil of Nutmeg	1 "
Oil of Lemon	10 "
Alcohol	700 "
Water to make	1000 "

PHYSICAL PROPERTIES,- clear liquid, odor of Ammonia, warm, agreeable, aromatic taste.

THER. VALUE IN MEDICINE,- carminative, and general stimulant.

THER. VALUE IN DENTISTRY,- in syncope.

DOSE,- $1/2$ to 2 fl. drs.

GENERAL REMARKS,- The Ammonia compounds act upon the brain and nervous system as a general stimulant, increasing the heart's frequency, blood pressure and the functions of the respiratory centre, hence use in the exhaustion of typho-pneumonia and syncope.

AMYL NITRIS

SOURCE,- by distilling HNO_3 with Amylic Alcohol.

PHYSICAL PROPERTIES,- amber colored liquid, vineapple odor, volatile, inflammable, Soluble in Alcohol, Chloroform, and Ether.

PHYSIOLOGICAL ACTIONS,- stimulant (circulatory), antispasmodic.
 THER. VALUE IN MEDICINE,-chloroform narcosis, angina pectoris,
 THER. VALUE IN DENTISTRY,-chloroform narcosis. asthma.
 DOSE,- 1 to 5 gtts (by inhalation).

CAMPHORA, Camphor.

SOURCE,- from the gum of a tree in Japan and China, by sublimation.

PHYSICAL PROPERTIES,- solid, colorless, translucent, crystalline masses, pungent, penetrating odor, strong bitter taste, followed by a sensation of cold. Two common forms,-Aqua Camphorae, 1/2 gr. in 1 oz. water.-Spiritus Camphorea, 1 in 10 SVR

PHYSIOLOGICAL ACTIONS,- stimulant, anodyne, refrigerant, carminative.

THER. VALUE IN MEDICINE,- externally as an ingredient in liniments. Internally as a stimulant for debilitating fevers and nervous disorders.

THER. VALUE IN DENTISTRY,- spirits allay pain of nearly exposed pulp,-modifies action of carbolic acid in Campho-phenique ingredient of celluloid.

DOSE,- 2 to 10 gr.(of the gum), 10 to 30 m.(of the spirits).

CAPSICUM, Cayenne Pepper.

SOURCE,- from yellow pods of a tropical plant.

PHYSICAL PROPERTIES,- when ground it gives bright red powder, aromatic odor, fiery taste.

PHYSIOLOGICAL ACTIONS,- stimulant, carminative, and counter-irritant.

THER. VALUE IN MEDICINE,- in dyspepsia to stimulate gastric secretion.-as a circulatory stimulant.-as a stimulant in Opium, Belladonna, and Aconite poisoning.

THER. VALUE IN DENTISTRY,- counter-irritant in threatened abscess,-with Arom. Sulph. Acid in caries of the maxillary bones,- to hasten resolution in dental abscess.

DOSE,- 1/4 to 1 gr.(of the powder), 5 to 30 m.

SEDA T I V E S.

ACONITUM, Monkshood.

SOURCE,- from a plant in the mountains of Europe and Asia.

The tincture is made from the leaves and roots.

PHYSICAL PROPERTIES,- The tincture is a brownish liquid causing tingling and numbness.

PHYSIOLOGICAL ACTIONS,- sedative, (Poison)

THER. VALUE IN MEDICINE,- in inflammatory affections, neuralgia, rheumatism, peritonitis, etc. Locally for painful sprains and bruises.

THER. VALUE IN DENTISTRY,- with iodine as counter-irritant in pericementitis, said to retard the circulation and stimulate the lymphatics.

(Aconitum, Cont'd).

DOSE,- 1 to 5 m of the tincture. Note, -this does not apply to Fleming's tincture, which is twice as strong as the official tincture.

GENERAL REMARKS,- care must be used in applying to large surfaces.

R for pericementitis.

Tincturae Aconitae (Fleming's) 3ss

Iodi (crystals) ad sat.

Signa,- Apply to dried surface of gum over the root of the tooth.

R for neuralgia and bruises.

Tincturae Aconitae

Chloroformi

Spiriti Ammoniae āā f3ii

Olei Ricini f3i

Linimenti Saponis 3i M.

Signa,- To be rubbed on the affected part. (Quinine intern'y)

Notes on the Physiological Actions of Aconite.

Locally,- tingling and numbness.

Internally,- on the Nervous System. (a) On the Brain,- Intellectual faculties generally unaffected. (b) On Spinal Cord,- Paralysis of reflex and motor functions of the cord,- loss of power in muscular system.

On Circulation,- Sedative,- Heart first slowed, then quickened, irregular and feeble,- blood pressure lowered.

On Respiration and Temperature,- slow and irregular,- temperature falls.

On Secretions,- Salivary, sudorific and urinary secretions increased. Aconite is indicated in two conditions, viz: Fever and Pain.- The cardiovascular excitement, the dry skin, high temperature, and scanty secretions of fever all relieved by Aconite.

Symptoms of poisoning:

Dilated pupils.

Dim vision.

Labored respiration.

Pulse slow, then rapid and feeble, then imperceptible.

Fatigue in extremities and muscular weakness.

Tongue, breath and surface of the body cold.

Perspiration.

Antidotes and Treatment,- Emetics, stimulants,- heat, brandy and ammonia.

DIAPHORETICS or SUDORIFICS.

PULVIS IPECACUANHAE COMPOSITA, Dover's Powder.

SOURCE, - Opium 1 part

Ipecacuanha 1 part.

Potassium Sulphate 8 parts

PHYSIOLOGICAL ACTIONS, - diaphoretic, sedative, astringent, narcotic and antispasmodic.

THER. VALUE IN MEDICINE, - influenza, rheumatism.

THER. VALUE IN DENTISTRY, - Pericementitis, to be taken at bedtime with hot drinks, warm clothing and hot foot baths.

DOSE 5 - 10 grs.

LICUOR AMMONIAE ACETATIS, - Spirit of Mindererus.

SOURCE, - sat. sol. of Ammonium Carbonate in Acetic Acid

PHYSICAL PROPERTIES, - colorless liquid, saline taste.

PHYSIOLOGICAL ACTIONS, - diaphoretic, diuretic, refrigerant.

(Liquor Ammonii Acetatis continued)

THER. VALUE IN MEDICINE, - febrile and inflammatory affections, - catarrh and influenza.

THER. VALUE IN DENTISTRY, - diaphoretic and refrigerant in pericementitis.

DOSE, - 1 dr. to 1 oz.

Other Diaphoretics, - Ipecacuanha, Ammonium Carbonate, Aconite, Jaberandi, - also exercise in the sunshine, Turkish baths

Diaphoretics arrest forming diseases by causing the blood to flow to the surface of the body, thus relieving internal congestions and eliminating substances that should have been excreted from the blood.

EXPECTORANTS,

AMMONII CHLORIDUM, - Sal Ammoniac.

SOURCE, - by neutralizing HCl with NH_3 and evaporating.

PHYSICAL PROPERTIES, - white crystalline powder, sharp saline taste,

Soluble in water, 1 in 4.

PHYSIOLOGICAL ACTIONS, - expecterant, diuretic, diaphoretic.

THER. VALUE IN MEDICINE, - favorite local application, in the form of a spray to increase the secretions of the pharynx, Eustachian tube, larynx, bronchi, &c. Bronchitis, Rheumatic affections.

THER. VALUE IN DENTISTRY, - facial neuralgia, - gargle for indolent ulcers. Flux for refining gold (chloridizes the baser metals).

DOSE, - 5 to 30 gr.

OTHER EXPECTORANTS, - Benzoic acid, Nux Vomica, Ipecacuanha, Apomorphine, Potassium Iodide.

EMETICS.

ZINCI SULPHAS

SOURCE,-action of sulphuric acid on zinc.

PHYSICAL PROPERTIES,-colorless efflorescent crystals,unpleasant metallic taste. Soluble 10 in 7 of water.

PHYSIOLOGICAL ACTIONS,- emetic, astringent, tonic.

THER.VALUE IN MEDICINE,-perhaps the best mineral emetic,-its internal use as a tonic is gradually being discredited.

THER.VALUE IN DENTISTRY,-ulceration of the muc.membrane,-fluid for temporary filling.

DOSE,- as a tonic, 1 to 5 gr., as an emetic, 10 to 30 gr.

GENERAL REMARKS,-Zinc Sulphate is regarded as the best mineral emetic, and Ipecacuanha as the best vegetable.- other emetics Cupri Sulphas, alum, mustard, warm water, apomorphine.

P U R G A T I V E S.

A normal healthy action of the various parts of the intestinal tract is one of the first essentials of good health. Our habit of life and manner of diet are such that indigestion, constipation and other disorders of the intestinal tract are very common and are the cause of many ailments. Except where prompt relief is demanded, constipation may be corrected by resorting to a favorable diet,- including green vegetables, fruits,whole wheat bread, figs, prunes &c.,and to a more active habit of life. Resort to medicinal interference is frequently necessary for obstinate constipation. First, a vigorous purge followed by a saline to thoroughly empty the gut, as a normal tone cannot be restored to a distended bowel; then a regular course of aperient medicine to establish a normal habit.

In dentistry purgatives are of importance in the reduction of blood pressure in pericementitis. Therefore resort is had to salines and hydrogogues.

MAGNESII SULPHAS, Epsom Salts. MgSO_4 .

SOURCE,- by action of H_2SO_4 on Magnesium Limestone.

PHYSICAL PROPERTIES,- small colorless crystals,bitter taste,- Soluble 10 in 13 of water.

PHYSIOLOGICAL ACTIONS,- purgative, refrigerant.

THER. VALUE IN MEDICINE,-most common saline purgative,-to reduce blood pressure in acute inflammatory and febrile affections.- in dropsy to remove water from the tissues.

THER.VALUE IN DENTISTRY,-to reduce blood pressure in pericementitis.

DOSE,- 1 dr. to 1 oz.

OTHER PURGATIVES,- Rhubarb root & preparations,-followed by constipation. Aloes,- for the lower bowel.

Calomel or the Subchloride of Mercury,-indirect chologogue, sweeps the bile from the gut and increases the action of the liver.

Cascara Sagrada,- a simple laxative,- good general purpose remedy.

DIURETICS.

The kidneys are one of the great excretory organs. They remove from the blood, urea, uric acid, pigments, salts and water.- they do not manufacture these, but sweep them from the circulation. (Salivary organs secrete saliva, the kidneys excrete what is already in the blood.) The condition of the urine is a key to the manner that other organs are performing their functions. Failure in the functions of the kidneys soon shows itself upon other organs. The retention of waste products, like ashes clogging a fire, checks functional activity in the liver and in general metabolism. The action of the kidneys may be improved by the ingestion of plenty of water, also by the use of many medicinal remedies, more especially the alkaline salts.

NARCOTICS, HYPNOTICS AND ANODYNES.

BELLADONNA, and its alkaloid Atropine.

SOURCE,- from the leaves of an European plant.

PHYSICAL PROPERTIES,-in the form of various preparations,-

Extract, liniment, ointment, plaster.

PHYSIOLOGICAL ACTIONS,- anodyne and antispasmodic.

THER. VALUE IN MEDICINE,-for all spasmodic affections.- to relieve pain in neuralgia.

THER. VALUE IN DENTISTRY,-principal ingredient in ointments for neuralgia.

DOSE,- Belladonna, 1/4 to 1 gr. of the Extract.

5 to 30 m. of the Tinct.

Atropinae Sulphas, 1/120 to 1/60 gr.

GENERAL REMARKS,-

Notes on Physiological Actions.

Externally, - aqueous solutions not absorbed by the unbroken skin; solutions in oils, ointments, alcohol, etc. are absorbed and depress the sensory nerve endings. Therefore, anodyne and partial local anesthetic.

Internally

On the Brain,- large doses, delirium followed by depression.

On the Spinal Cord,-Reflex irritability increased, then decreased.

On the Medulla,-three centres strongly affected.

(a) Respiratory Centre,-powerfully stimulated, breathing frequent and deep.

(b) Cardiac Centre,-stimulated for a time and the heart slowed.

(c) Vaso-motor Centre,-stimulated then depressed.

On Special Nerves,

- endings of the third nerve in sphincter muscle of the iris paralyzed, pupil dilated.

- Chorda Tympani paralyzed, scant saliva, dry mouth, etc.

- Mammary nerve depressed.

- Vagus terminations in Bronchial walls paralyzed relieving muscular spasm, and facilitating the air current,-afferent branches also paralyzed, diminishing sensibility,-hence use of Belladonna or Atropine in the cough of Bronchitis.

- Inhibitory nerves to the intestines depressed, peristalsis increased, bowels relaxed. (Opium constipates)

Secretions, - all checked except of the bowels and kidneys.

POTASSII BROMIDUM

SOURCE,- sol. of K_2CO_3 to a sol. of $FeBr_2$, - the Fe is precipitated and the KBr obtained by evaporation.

PHYSICAL PROPERTIES,- white cuboid crystals,- odorless, strong saline taste. Soluble in H_2O .

PHYSIOLOGICAL ACTIONS,- narcotic, hypnotic, anodyne, sedative, antispasmodic.

THER. VALUE IN MEDICINE,- in restlessness and sleeplessness of mental strain, or in any cerebral excitement not inflammatory,- often combined with opium or chloral.-most important use, in Epilepsy.

THER. VALUE IN DENTISTRY,- convulsions of teething,-neuralgia from diseased teeth,-as a sedative anodyne in pericementitis.

DOSE,- 5 to 30 gr.

GENERAL REMARKS,- Notes on Physiological Actions.

- bromides depress the three great centres of the medulla.
- functions of the brain depressed, sleep ensues.
- reflex irritability of the cord lessened.
- bromides have little effect upon digestion, so that they may be taken even for years without deranging the stomach.

T O N I C S.

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Not many drugs that are tonics are described under that heading. Their action is similar to, and quite as obscure as Alteratives, and are considered under that head. Like Alteratives they improve the processes of nutrition. Chief among them are the various forms of Iron; but iron is a constituent of the tissues and is therefore a food.

FERRI PERCHLORIDUM, Muriate of Iron.

SOURCE,- by treating iron wire, first with HCl and then HNO_3 .

PHYSICAL PROPERTIES,- orange yellow crystals, odorless, strong styptic taste, deliquescent. Solubility, freely in water and Alcohol.

PHYSIOLOGICAL ACTIONS,- tonic, astringent, styptic, hemostatic.

THER. VALUE IN MEDICINE,- Externally,- a styptic in hemorrhage. Internally,- to improve appetite and digestion,- to restore or improve hemoglobin in the blood.

THER. VALUE IN DENTISTRY,- internally for neuralgia due to anemia,- externally as a styptic.

DOSE,- of the Tinct. 10 to 30 m.

LIQUOR FERRI SUBSULPHATIS, Monsel's Solution.

SOURCE,- sulphate of iron acted upon by H_2SO_4 and HNO_3 .

PHYSICAL PROPERTIES,- dark brown liquid, odorless, strong styptic taste, acid reaction.

PHYSIOLOGICAL ACTIONS,- tonic, astringent, styptic, hemostatic.

THER. VALUE IN MEDICINE,- same as the perchloride but not usually given internally,- styptic in hemorrhage.

(Liquor Ferri Subsulphatis Cont'd)

THER. VALUE IN DENTISTRY,- in persistent hemorrhage after extraction.

DOSE,- 5 to 15 m.

GENERAL REMARKS,- an alkaline gargle and mouth wash should always be used before and after each dose of any of the Iron salts.

Iron salts increase the hemoglobin in the red corpuscle and thus improve respiration, appetite and health generally.

QUININAE SULPHAS,-

SOURCE,- from Cinchona bark, the alkaloid of which is Quinine,- this when neutralized with H_2SO_4 gives the Sulphate of Quinine,- most common form used.

PHYSICAL PROPERTIES,- filiform, snowwhite crystals, very bitter taste.- Soluble in water.

PHYSIOLOGICAL ACTIONS,- tonic, antipyretic, antiperiodic.

THER. VALUE IN MEDICINE,- fevers, colds, influenza, malaria.

THER. VALUE IN DENTISTRY,- for treatment of malarial neuralgia.

DOSE,- 2 to 10 gr.

GENERAL REMARKS,- large doses cause impaired vision, deafness and ringing in the ears.

Quinine acts specifically upon the white corpuscle, checking its amoeboid movements and arresting its tendency to migrate through the walls of the capillaries in inflammation. It also reduces the respiratory power of the hemoglobin, thus reducing tissue waste. Quinine is therefore a powerful reducer of metabolism and of great value in inflammatory processes.

NUX VOMICA

SOURCE,- from the seeds of a plant in the E. Indies.

Its alkaloid is Strychnine, of which the Sulphate is most commonly used.

PHYSICAL PROPERTIES,- (of Strychnine Sulphas) small colorless crystals, intensely bitter taste.

PHYSIOLOGICAL ACTIONS,- tonic (nerve), stomachic.

THER. VALUE IN MEDICINE,- as a stomach bitter in feeble digestion,-in chronic nervous disorders as chorea, epilepsy, neuralgia, asthma.

THER. VALUE IN DENTISTRY,- as a cardiac restorative in chloroform narcosis. 5 to 10 drops of the Liquor Strychninae Hydrochloricis hypodermically.

DOSE,- of the tinct. Nux Vomica, 5 to 20 m.

of Strychnine, 1/60 to 1/10 gr. (Always in solution).

GENERAL REMARKS,- Symptoms of poisoning.

- twitching of muscles, and jerking of limbs.
- tetanic spasms and stiffening of the body.
- difficult breathing.

Treatment.

- evacuate stomach.
- administer tannic acid to ppt. the alkaloid.
- inhalation of chloroform.

D E T E R G E N T S.

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POTASSII CHLORAS

SOURCE,- by passing an excess of Cl through K_2CO_3 and slaked lime.

PHYSICAL PROPERTIES,-white pearly crystals,no odor,cool saline taste.

PHYSIOLOGICAL ACTIONS,-detergent, diuretic.

THER. VALUE IN MEDICINE,- sore throat,ulcerated mucous membrane, catarrhal affections, diphtheria.

THER. VALUE IN DENTISTRY,- Stomatitis.

DOSE,- 5 to 30 gr.

GENERAL REMARKS,-most alkaline salts are detergents.

OTHER DETERGENTS,- Hydrogen di-oxide, sapnacious agents.

A N T I P Y R E T I C S.

-----:-----

ACETANILIDE, Antifebrin.

SOURCE,- from glacial acetic acid and pure colorless aniline.

PHYSICAL PROPERTIES,-white crystalline powder,odorless,slight pungent taste. Soluble 1 in 50 warm water and freely in S.V.R.

PHYSIOLOGICAL ACTIONS,-antipyretic, anedyn, diaphoretic.

THER.VALUE IN MEDICINE,-to reduce temperature of fever heat,-to reduce the pain of headache,neuralgia,sciatica,etc.

THER.VALUE IN DENTISTRY,- facial neuralgia,pulpitis,-to reduce the pain of pericementitis,- 2-1/2 gr.every hour till 10 grs. have been taken.

DOSE,- 2 to 5 gr.

GENERAL REMARKS,- Acetanilide is the basis of Ammonol and Antikamnia.

B to relieve pain of pericementitis.

Acetanilide 3i

Spiriti Vini Gallici 3v

Syrupi

Aquae aa 3iv M.

Signa,-One tablespoonful an adult dose.

GENERAL REMARKS,-other drugs similar in action are:-

Phenacetine,-depresses the heart less than Acetanilide,also slower but its action lasts longer and it is considered safer.

Antipyrine,-not so safe as Acetanilide; contracts blood vessels,therefore hemostatic.

M I S C E L L A N E O U S.

-----:-----

PULVIS RADICIS IRIDIS, Powdered Orris Root.

SOURCE,-root of a plant in Italy.

THER.VALUE IN DENTISTRY,-ingredient of many dentifrices for its violet odor and stimulating taste.

SODII SULPHIS

DENTAL USES,- lotion for apthous ulcers,-with Boracic Acid for bleaching teeth.

DOSE,-5 to 30 gr.

ZINCI OXIDUM

SOURCE,- by exposing Zinc Carbonate to red heat.

PHYSICAL PROPERTIES,-white or yellowish powder, odorless, tasteless.

PHYSIOLOGICAL ACTIONS,-astringent.

THER. VALUE IN MEDICINE,-as a dusting powder for its astringent properties

THER. VALUE IN DENTISTRY,-in the Zinc series of fillings,-with vaseline to determine the point of contact in plates.

PRESCRIPTION WRITING.

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Points to be remembered in making prescriptions

- 1 - object of the prescription.
- 2 - selection of drug or drugs.
- 3 - be on the alert for incompatibles
 - never prescribe strong acids with other agents without knowing what reactions may take place.
 - do not combine any acid with a Hydrate or a Carbonate unless it is the action of the newly formed substance that is desired.
 - tannic acid is incompatible with albumen, gelatine, mineral acids, the per-salts of Iron, alkalis and most alkaloids.
 - never prescribe an alkalis with a salt of an alkaloid,- precipitates it as the alkaloid.
- diet must harmonize with the medicines prescribed.
- medicine must be taken at the proper period
 - alkalis before meals.
 - acids with or after meals.
 - nauseating or irritating drugs with meals.
 - hypnotics before retiring.
- frequency,-
 - purgatives, one active dose.
 - laxatives, several doses continued for a time.
 - emetics, one active dose.
 - tonics and alteratives, small frequent doses.
- duration,-
 - accumulation, powerful remedies taken more rapidly than they can be excreted accumulate and cause toxic symptoms.
 - toleration,- the system gradually becomes accustomed to certain drugs, and larger doses have to be taken to keep up the effect.
 - habit,- certain drugs taken for a period of time establish an appetite for the drug, or a habit.
- action of drugs modified by:-
 - age, more active in childhood
 - sex, " " with females.
 - temperament, nervous and sanguine temperaments more susceptible.
 - habit, requires larger dose.

WEIGHTS AND MEASURES

-----:-----

For Solids

20 grains equal 1 scruple, ʒi
 3 scruples " 1 drachm, ʒi
 8 drachms " 1 ounce, ʒi
 12 ounces " 1 pound, lb.i

For Liquids

60 minims equal 1 fluid drachm, fʒi
 8 f. drs. " 1 " ounce, fʒi
 20 f. oz. " 1 pint, Oi
 16 " " " 1 " (U.S.) Oi

Approximate measures

Teaspoonful equals about fʒi
 Dessertspoonful " " fʒii
 Tablespoonful " " fʒiv vel fʒss
 Wineglassful " " fʒii
 Teacupful " from fʒiv to fʒviii
 2 ounces equal 960 grs. or minims, approximately 1000 gr. or m.

COMMON ABBREVIATIONS.

-----:-----

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aa	ana	of each
ad lib.	ad libitum	at pleasure, or according to discretion.
ad sat.	adsaturandum	until saturated.
aq.	aqua	water.
aq. dest.	aqua destillata	distilled water.
chart.	chartula	a little paper, containing one dose.
cort.	cortex	the bark.
f. or ft.	fiat or fiant	let there be made.
fol.	folium or folia	leaf or leaves.
gtt.	gutta	a drop.
M.	Misce	Mix.
O.	Octarius	an eighth of a gallon. A pint.
pulv.	pulvis	a powder.
pil.	pilula	a pill.
q.s.	quantum sufficit	a sufficient quantity.
S. or Sig.	Signa	Let there be written.
ss.	semis	a half.
rad.	radix	a root.
cong.	congius	a gallon.

The parts of a prescription

The Superscription, R, an abbreviation for Recipe, "Take"
 The Inscription, consisting of the names of the drugs in the genitive case (the vehicle in the accusative case if ad is used with it), and the doses in the accusative case.
 The Subscription, the directions to the dispenser.

The Signature, the directions to the patient, from Signetur or Signa.

The fifth part of a B is the physician's name or initials at the bottom on the right and the patient's name at the bottom on the left, and under it the date.

The Inscription of the more complex prescriptions may be divided into:

- a,- the Basis, or principal ingredient of the prescription.
- b,- the Adjuvans, or that which assists its action.
- c,- the Corrigenes, or that which corrects its operation.
- d,- the constituens, vehicle, or excipient, which imparts an agreeable or convenient form.

TYPICAL PRESCRIPTION. (written in full)

Superscription.-B

Inscription.- Tincturae Ferri Chloridi, fl 3iii (basis)
 Quininae Hydrochloratis, gr.xxx (adjuvans)
 Magnesii Sulphatis, 3ii (corrigenes)
 Glycerini, fl 3ii (corrigenes)
 Infusum Cinchonae ad fl 3viii (vehicle)

Subscription.- Fiat mistura.

Signature.- Signa.- Take one table-spoonful three times daily,
 two hours after meals.

William Smith, Esq. (patient's name) A.B.C. (phys's initials)
 Feb. 22nd, 1901. (date)

The same B with allowable abbreviations.

B
 Tinc. Fer. Chlor., fl 3iii
 Quin. Hydrochlor., gr.xxx
 Mag. Sulphat., 3ii
 Glycer., fl 3ii
 Infus. Cinch. ad fl 3viii
 F. m.

S. Take one tablespoonful three times daily two hours
 after meals.

William Smith, Esq., A.B.C.
 Feb. 22nd, 1901.

Other Forms of Prescriptions.

B,- An antiparasitic ointment.

Unguenti Hydrargeri Nitratis 3i
 Olei Bergamoti gtt. v
 Vaseline 3vi M.

S. Use as ointment daily.

B,- for habitual consti-
 pation.

Aloes Barbadosensis 3ss.
 Hydrargeri Sub-

chloridi gr.vii
 Olei Anisi gtt.v

Syrupi q.s. ut fiant
 pilulae xii.

Sig. One pill each
 night at bedtime.

B,-Dusting powder for
 bromidrosis.

Atrop. Sulph. griiii

P. Acid. Salicyl

P. Zinc. Carb. Precip.

P. Mag. Ust. aa3iv

P. Amyli 3xv

P. Talci 3xx

S. Use as dusting powder.

B,- for Bromidrosis

Atrop. Sulphat. gr. v

Acid. Salicyl. gr.xxx

Eau de Colog. 3v

Aq. ad 3xvi M.

S. After bathing, moisten
 the perspiring parts.

1225

$\frac{1}{60}$ - $\frac{1}{10}$ gr.

Acidum Arseniosum

duri Perchloridum

Hydrargyri Perchloridum

Ammoniac Hydrochloratis

1 - 5 m

Acidum Carbolicum

Ammoniac Ribes (Rubrae)

Aconitum (Lancea)

Ammoniac Vinique

Creasatum

Alumina A. A. A.

" Caribaeum

" Cannamoni

" Eucalypti

all. tox. dis. caus?

dy. cach. dis

gum. act. purg.

tonic

styp. esch. gum.

local. ab. caus

stim. act. purg

calant

gum. am. cum

corac.

gum. esch. styp

act. stim.

gum. es. stim. cum

$\frac{1}{4}$ - 1 gr.

Cocaine Hydrochloratis

Alumina

Sulphurum

Sodium

Ammoniac

5 - 30 m

Sulphuricum Aromaticum

Ammonia

Potassii Bicarbonas anodis

" Bromidum r. ac. hyp. anod. sed.

" Chloroform deliquet

local.

nause. anod. hyp

sed. r. ap. act.

anod. sed. act. sed

stim. act. dis.

stim. tonic

anod. sed. act. sed

anod. sed.

5 - 20 gr.

Alumina A. A. A.

2 - 10 gr.

Ammonii Carbonas

Ammoniac

m Chloroform

g. Potassii Sulfur

Quinina Sulfur

Sodium Chlorid

Miscellaneous Prescriptions

R for Neuralgia		R for Neuralgia (internally)
Ext. Belladonnae	3iii	Ext. Belladonnae gr. vi
Camphorae	3i	Quin. Sulphat. 3ss
Chloroformi	fl 3i	Syr. Simplicis q.s. ut ft pil. no xii.
Olei Olivae	fl 3ii M.	S. Take one pill three times daily.
S. To be rubbed on painful part.		

R for simple chronic		R another of the same action
Rhinitis		Seiler's A. and A. tablets, tab.i
Acidi Carbolici	m.xxx	Tinc. Hamamelis 3i
Sodii Biboratis		Glycerine 3ii
Sodii Bicarbonatis	āā 3i	Aq. ad 3ii
Glycerini	fl 3iii	S. Use as a spray.
Aquam ad	3iv M.	
S. Use as a spray.		

DRUGS, DOSES AND PHYSIOLOGICAL ACTIONS.

✓ Acidum Arseniosum,-antisept. irrit. caust. alt. ton.	
antiper.	gr. 1/60 to 1/10.
✓ " Boricum,- antisept. disinfect. deod.	gr. 5 to 15
✓ " Carbolicum,- styptic. eschar. loc. anes. germ.	
sed. carm.	gr. 1/4-1; m. 1-5.
" Hydrochloricum,- ton. refr. ast. caust.	
disinf. esch.	m. 10 to 30
" Nitricum,- esc. ton. alt. refr.	m. 10 to 30
" Sulphuricum,- esc. ton. ast. refr.	m. 10 to 30
" Sulph. Aromat.-ast. caus. disin. ton. stim.	m. 5 to 30
" Tannicum,-ast. disin. styptic.	gr. 10 to 30
" Trichloroaceticum,- ast. germ. esc. stim.	-----
Alcohol,- stim. ast. refr. disinfect.	indefinite.
Ammonia,- stim. antacid, carminative.	m. 5 to 30
Alumen,- astrin. emetic, styptic, purgative.	gr. 10 to 30
Ammonii Carbonas,-stim. diaphor. expector. antacid.	gr. 2 to 10
" Chloridum,-expector. diaphor. diuretic.	gr. 5 to 30
Amyl Nitris,- stim. antispas. (by inhalation)	m. 1 to 5
Argenti Nitras,- eschar. astrin. antispas. sedat.	gr. 1/6 - 1/2
Aconitum,- sedative. (tincture)	1 to 5
Aristol,- antiseptic (?) prophylactic.	Not given internally.
Atropinae Sulphas,- anodyne, antispasmodic.	gr. 1/120-1/60
Auri Terchloridum,- styptic. eschar. disinfect.	gr. 1/60 - 1/10
Belladonna,- anodyne, antispasmodic. (Ext.)	gr. 1/4 to 1.
Benzoinum,- disinfect. stim. disinfect.	Not given internally.
Calcei Liquor,- astr. antacid.	oz. 1 to 2.
Calx Chlorata,- disinfect. stim. bleaching agent.	Not given int'lly.
Camphora,- stim. refriger. anodyne, carminative.	gr. 2 to 10
Campho-phenique,- germ. stim. carmin. loc. anes.	m. 1 to 5
Capsicum,- stim. carmin. counter-irritant.	gr. 1/4 to 1.
Chloral Hydras,- hypnotic, antiseptic.	gr. 5 to 20
Chloroform,- anes.	m. 2 to 10
Creasotum,- germ. eschar. styptic. astr. stim.	m. 1 to 5

5-15 - *acidum Boricum* q - a. s. s.
Quercin q - *disap.*, *antipyretic*, *diaphoretic*.
 5-20 - *Chloral hydrate* - *hypnotic*.
 5-30 - *Aromatic sulphuric* - *asth.*, *carr.*, *dis.*, *toxic.*, *stom.*.
Ammonia - *stim.*, *asthoid*, *corrosative*.
Pol. heart. - *asthoid*.
Pot. Bromidum - *narc.*, *hyp.*, *anod.*, *sed.*, *anti.*.
Pot. chloras. - *diuretic*.

10-20 - N_2O_4 - HCl 420_3 *Formic* q *Sini* *Perchloridum*

Cocainae Hydrochloratis,- anesth.(loc),stim.	gr.1/4 to 1.
Ferri Perchloridum,- tonic,astr.hemost.styptic.(Tinc)	m.10-30.
Liq. Ferri Subsulphatis,-ton.astr.styp.hemost.	m. 5 to 15.
Glycerine,- demulcent	dr. 1 to 2
Namamelis(Tincturae)astr.hemost.anodyne,sodat.	fl dr.1 to 2
Hydrargeri perchloridum,-germ,alterative,purg.	gr.1/60-1/10
Hydrargeri Chloridum mite,-alter. purg. diur.	gr. 1 to 5.
Hydrogen Peroxidum,- disinf. detergent.	fl dr. 1 to 3
Hydronapthol,- stim. germicide	Not given internally.
Iodoform,-antiseptic(?)prophylactic,anodyne.	gr. 1 to 5.
Iodol,- antiseptic.	Not given internally
Iodum,- irrit.alter.disinf.stim.ton.expect.	gr. 1/4 to 1.
Krameria,- astr.	fl dr. 1 to 2
Liq. Amm. Acetatis,- diaphor. diur. refrig.	fl dr.1-fl oz.1.
Liq. Sodae Chlorinatae,-disinf.deodorant, astr.	stim. m.15-30
Magnesii Sulphas,- purgative, refrig.	dr. 1 to oz.1.
Menthol,- anod. disinf. antispas. refrig.	gr. 1/4 to 1
Morphinae Aceta,- narcotic, anodyne, hyp.antisp.	gr.1/6 to 1/2
Morphinae Sulphas,- Same as the Acetate.	
Myrrha (Tincturae),-astr. stim. expector.	m. 15 to 60
Oleum Cajaputi,- disinf. stim. carmin.	m. 1 to 5
Oleum Caryophylli,- germ. disinf.stim.carmin.	"
" Cinnamomi	"
" Eucalypti	"
Opium,- narc. anod. hyp. sed. antisp. diaphor.	gr. 1/4 to 1.
Plumbi Acetas,- astr. sed.	gr. 1 to 5
Potassii Bicarbonas,- antacid	gr. 5 to 30
Potassii Bromidum,- narc.hyp.anod.sed.antisp.	gr. 5 to 30
" Chloras,- detergent.	gr. 5 to 30
" Iodidum,- alter.stim.ton. expector.	gr. 2 to 10
" Permanganas,- disinf.	gr. 1 to 5
Pulvis Ipecacuanhae Compositus,- diaph. sed.	
astr. antispas.	gr. 5 to 10
Quininae Sulphas,- ton. antipyr. antiperiod.	gr. 2 to 10
Resorcin,- disinf. antipyr. diaphor.	gr. 5 to 15
Sodae Phenas,- disinf. hemostatic styptic.	gr. 2 to 10
Sodii Bicarbonas,- antacid	gr.15 to 30
" peroxidum,- germ. deodor. bleaching agt.	Not given inter.
Strychninae Hydrochloratis,- tonic (nerve)	gr. 1/60-1/10
Thymol,- germ. stim.	gr. 1 to 2
Zinci Chloridum,- astr. eschar. germ.	gr. 1/4 to 1
" Oxidum,- astr.	gr. 2 to 10
" Sulphas,- emetic, astr. ton.(as emetic)	gr. 10 to 30
	(as ton) gr. 1 to 5.

Obtundent

Ry

Ext. Aconiti R F ζiii

corbolic acid ζv

Gum Camphor ζi

Mercbale ζiv

alcohol ζi

Ol. Muscous $m \times \text{v}$

